BEFORE SCHOOL CHECK NURSES' EXPERIENCES OF MOTIVATIONAL INTERVIEWING DURING THE WEIGHT-RELATED REFERRAL PROCESS.

AN INTERPRETIVE PHENOMENOLOGICAL STUDY.

A thesis submitted in partial fulfilment of the requirements for the degree of Master of Health Sciences in the University of Canterbury

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2018

Acknowledgements

I would like to acknowledge and thank my supervisors Dr Mark Wallace-Bell and Associate Professor Eileen Britt from the School of Health Sciences (College of Education Health, and Human Development), for your invaluable support and guidance throughout the entire research and writing process. There were exceptional circumstances that disrupted my ability to finish this thesis in the time originally anticipated, but with your belief and unwavering support I was able to finish in good time.

Thank-you to the amazing Before School Check nurses who not only gave your valuable time but were willing to share your experiences. Your honesty and frankness about your experiences was truly a privilege to be a part of. Your participation made this research possible and valuable.

Kia ora and thank-you to Professor Angus Macfarlane and Dr Fleur Harris for your support and encouragement, it meant so much to me.

To my mum Erin for propping me up during the hard times I faced – you helped to get me through. You always believed in me too.

To my tamariki Charlie and Iris. This was always for us.

Finally, I would like to acknowledge my late dad, William Jarden. I know you would have been proud.

Preface

Central to this study is the impact and importance of communication during clinical encounters – specifically communication around sensitive topics. What assists with sensitive conversations, is awareness of the wording that is applied. Due to the central focus of this study that examines the communication exchange between nurses and whānau (families) of children that have been identified as ($\geq 98^{th}$ BMI%), words such as obese, obesity and overweight, denial, and resistance have been exchanged where possible for alternative non-judgemental language. Obese and obesity have been replaced with words such as high weight, above healthy weight, high BMI, and extremely high weight, denial and resistance replaced with non-acceptance or low-motivation. This is in respect to the whānau and nurses involved, whilst also acknowledging what constitutes sensitive language, which is also consistent with Motivational Interviewing.

Abstract

The alarming rate at which high weight is increasing has caused a global reaction to try and reduce the number of children who present with high body mass index. In New Zealand (NZ), the numbers are at critical level with 11% of children deemed as above healthy weight (Ministry of Health, 2018a). In response to the worrying statistics, the NZ government announced a childhood weight reduction plan to combat this issue. This includes targeted interventions, increased support for at risk children, and education around food choices and exercise, to name a few. One of the initiatives introduced as part of this plan is the Raising Healthy Kids target. This health target aimed to identify (by the end of 2017) 95% of high weight children ($\geq 98^{th}$ BMI%) through the Before School Check programme and offer a referral to a health professional for clinical evaluation and family-based nutrition, physical activity and lifestyle interventions (Ministry of Health, 2018b). A crucial part of the referral process involved effective conversations with whānau to ensure uptake into these healthy lifestyle programmes occur. Although not explicitly funded for this, motivational interviewing (MI) was recommended as an effective evidenced-based form of patient-centred communication to assist with ensuring these referrals occurred.

The Before School Check for childhood high weight health initiative is problematic. While registered nurses have received some training in MI, their willingness, confidence, and effectiveness in using this technique is unknown. At present, there is uncertainty the nurses are applying motivational interviewing techniques, or any behaviour change talk skills effectively or at all. Therefore, this study sought to investigate the nurses' experience of weight-related conversations with whānau, and the level of understanding and application of motivational interviewing. This was achieved by using a questionnaire focussed on competencies in conjunction with recorded interviews concentrated on process-orientated

accounts of the referral process. The methods used for this research were descriptive statistics for the survey and thematic analysis for the interviews. The study found nurses perceived weight-related conversations with whānau as challenging when parents were unaccepting of the weight issue. To fulfil referral obligations, nurses used familiar directive communication techniques to refer whānau back to their general practitioner (GP) because this was considered the preferred option when the conversation was difficult to navigate, and parents were more accepting of the GP referral. Considering the recent Healthy Kids policy and the barriers identified in this research, effective client-centred communication training such as motivational interviewing is needed. This is to ensure nurses have the skills and the confidence to converse on highly sensitive topics such as children's weight problems so that the whānau can be referred onto treatment programmes. Further research is warranted to gain a better understanding of the experience on a larger scale and to ascertain the specific communication techniques used.

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Chapter one - Introduction

1.1 The Weight Issue

Globally 170 million children[1] are considered above healthy weight[2], and in 2016, over 41 million children under five years of age were deemed highly above healthy weight[3] (WHO, 2018). The majority of these children reside in middle to upper income countries, and within these regions, the lower-socio-economic population feature heavily in the highly above healthy weight statistics (WHO, 2016). The recent New Zealand (NZ) Health survey update 2016/17, reported that 12% of children aged between two and fourteen years are of extreme high weight (Ministry of Health, 2018a) and children aged between two to four years have the highest morbid above healthy weight rates (Ministry of Health, 2015c). NZ children aged between five and seventeen years who are of high weight feature at number five on the list of OECD countries for high body mass index (BMI) statistics (Organisation for Economic, Co-operation, & Development, 2014). This issue is considered one of the most alarming public health concerns the world faces this century (WHO, 2016). If left unchecked, the problem will put further stresses on health systems because they will struggle to sustain the current style of care. Local economies, communities, the workforce, and individual quality of life will be substantively affected by the results of weight inducing lifestyles.

Potentially, high BMI has serious health costs because of its associated risks for chronic diseases, such as heart disease, type 2 diabetes, stroke, hypertension, hyperlipidaemia and cancers such as colorectal, kidney and oesophageal (WHO, 2016)). Such non-communicable diseases are linked to the above healthy weight related lifestyle dynamics -

[1] According to WHO children encompasses ages 2 – 18 years (from WHO, 2015)
[2] WHO growth reference for school-aged children and adolescents; high weight = one standard deviation body mass index for age and sex (from WHO, 2015)
[3] WHO growth reference for extreme high weight children and adolescents = two standard deviations body mass index for age and sex.

unhealthy eating and physical inactivity (WHO, 2016), and significantly reduce quality of life and lead to early death.

Childhood weight issues increase the risk for chronic disease in adulthood (Forrest, & Riley, 2004). Further, if a child is of high weight at the age of four, there is a 20% increased possibility that the child will have above healthy BMI as an adult and if an adolescent is of high BMI the possibility increases by 90% (DeMattia, & Denney, 2008). If pre-diabetic symptoms are diagnosed during adolescence, 30% of boys and 40% of girls diagnosed, will have a lifetime risk of developing type 2 diabetes (Lytle, 2012). Other associated costs for high weight children include the psychological impacts of bullying and social isolation.

There is a plethora of interventions to help high weight children (WHO, 2015). The essential aims are to: act and instigate a programme to avoid serious high weight related health consequences in adulthood; and to find pathways that are viable with known benefits. Overall, the general recommendation for children is to generate health behaviour changes that result in BMI reduction (WHO, 2015). This requires a diet with increased fruit and vegetables and reduced saturated fats and sugars and increased physical activity to approximately an hour each day and less sedentary activities involving screen time.

In addition, the WHO (Geneva, 2012) strongly advise interventions at government levels, and primary and secondary care, to combat childhood weight problems. As many children pass through primary care at some stage, an office-based primary care intervention may be effective in changing weight inducing behaviours (Perrina, Finkleb, & Benjamin, 2007). Nurses have been recognised as a key component of such an intervention because they could identify high weight children and support whānau (families) with weight reduction (Barlow & Expert Committee on Childhood Obesity, 2007).

Nurses are often utilised as the first point of contact in medical care and often have repeated contact with patients. This repeated contact provides the potential for building strong positive relationships between nurses and parents/caregivers of high BMI children. This nurse-patient relationship could enable nurses to advocate for behaviour changes related to children's weight problems. Furthermore, many nurses have expressed a desire and an expectation within their role to provide health promotion and disease prevention (Bishop & Jackson, 2013). Yet, a recent meta-analysis examining effective weight-loss interventions for children, concluded that nurses are often overlooked in the implementation of weight-reduction treatments (Snethen, Broome, Treisman, Castro, & Kelber, 2016), which represents a missed opportunity to take advantage of the link nurses build with their patients.

Effective communication is at the crux of positive patient-provider relationships. The international medical community acknowledge patient-provider communication as a fundamental clinical skill and vital for improving patient care (Carcone, Jacques-Tiura, Brogan Hartlieb, Albrecht, & Martin, 2016). When there is a break-down in communication it can increase the likelihood for the patient to feel unheard, for vital information to be miscommunicated, and for the health professional to be viewed as uncaring (Levinson, Lesser, & Epstein, 2010). On the other hand, the benefits of effective communication are; better patient care; improved treatment adherence; better patient self-care; an overall decrease in health costs (Carcone et al., 2016); and improved personal and public health (Henry, Holmboe, & Frankel, 2013).

Aside from lack of skill, what impacts most frequently on the ability of health professionals to communicate on child weight-related issues, are problem non-acceptance and lack of parent motivation (Hutchinson, Emerick, & Saxena, 2016). Parental misperception of a child's weight status is deemed one of the most concerning causal factors why high weight

children do not engage in weight interventions (McKee, Long, Southward, Walker, & McCown, 2016; Perez et al., 2015). This can be highly challenging for many health professionals, especially those lacking in confidence.

There has been a recent move towards a more client-centred approach to improve patient-provider communication. The reason being the health professional operating as the expert can sustain negative health behaviours (Bishop & Jackson, 2013). In terms of the frequency of weight-related counselling, overseas research demonstrates that the occurrence is relatively low (McHale, Laidlaw, & Cecil, 2016). Another review examining paediatric weight found that general paediatricians have very low confidence in discussing weight issues with whānau and even fewer considered they communicate effectively (Hutchinson et al., 2016). In other words, even with a shift to client-centred communication, there is still a reluctance or inability by health professionals to counsel effectively on weight problems.

For clinicians to confidently use effective communication during weight-related encounters, it may need to be explicitly taught. It has been recommended that change in the current climate of advice giving by health professionals could be achieved by adopting a client-centred method such as Motivational Interviewing - MI (Barlow & Expert Committee, 2007).

1.2 The Current New Zealand Position.

In response to the worrying child weight statistics, the NZ government introduced the Raising Healthy Kids target as part of a plan to address children's weight problems. This health target aimed to identify (by the end of 2017) 95% of high BMI ($\geq 98^{th}$ BMI%) children through the Before School Check (B4SC) programme and offer a referral to a health professional for clinical evaluation and family-based nutrition, physical activity and lifestyle interventions

(Ministry of Health, 2018b). Launched in 2008, the B4SC is a free health and development assessment offered to all four-year olds across NZ (Hedley et al., 2012). The checks are delivered by trained nurses and are devised to assess a range of social, behavioural, and health developments, including height and weight (Ministry of Health, 2015a). The B4SC was selected to roll out the healthy weight target due its accessibility to all four-year old children and to create the foundations for early intervention (Ministry of Health - NZ, 2018).

Once children were identified as high weight, the B4SC nurses were required to refer the whānau onto a lifestyle coordinator who could then discuss a range of possible interventions whānau could participate in. A crucial part of this referral process involved conversations with whānau to ensure uptake into these healthy lifestyle programmes occurred. In line with international research, the current situation in NZ reflects the difficulties nurses have with weight-related counselling – "talking with parents is hard" (Wilson & Abbott, 2018). As NZ nurses have been handed a major role in identifying and addressing children's weight problems, it is vital the conversations are effective – for this MI has been recommended (Ministry of Health, 2015b).

1.3 Motivational Interviewing

Motivational interviewing is a collaborative, person-centred form of guided conversation to stimulate and reinforce motivation for change (Miller & Rollnick, 2013). Rather than a theory that was then developed into a programme to assist practitioners in their work, MI is an evolving method that can be used in many settings, cross-culturally, and in conjunction with other forms of intervention. The key elements of MI are to address ambivalence, and guide the conversation, through a process of listening and reflecting skills with the aim of evoking and enhancing change talk. The key components; or spirit of partnership, acceptance, compassion, and evocation, are unique differences that set MI apart

from other brief health interventions (Miller & Rollnick, 2013). This style of counselling enhances the fact each person is the expert on themselves with their own methods for changing behaviour.

The mechanics of how or why MI works has been extensively examined, with research still on-going. Current understanding posits the following hypotheses. If counselling is delivered in a method that creates defensiveness and maintains the status quo, then change is not likely to occur (Arkowitz, Miller, & Rollnick, 2015; Moyers, Miller, & Hendrickson, 2005). Conversely, if counselling is delivered providing accurate empathy and applied in a way that elicits the client's own reasons, ability and commitment to change, then behaviour change can occur (Arkowitz et al., 2015; Glynn & Moyers, 2010; Moyers, Martin, Houck, Christopher, & Tonigan, 2009).

Motivational interviewing is considered an ideal intervention with children and their whānau, on its own or as an adjunct with other interventions (Rollnick, Butler, Kinnersley, Gregory, & Mash, 2010). The essential elements - guiding and collaborating, of evoking personal reasons and decisions for change, and patient/whānau autonomy - can result in health behaviour change and improve the relationship between clients and health professionals (Rollnick et al., 2010).

This method differs to other interventions because the role of the health professional is not to dictate how change should occur, but rather elicit and strengthen the child's and his/her whānau abilities and reasons for making changes. Further, the utilisation of MI by health professionals may strengthen the relationship between provider and parent/child which could then lead to greater change outcomes (Williams & Wright, 2014). Reinforcing a positive relationship between health provider and parents/caregivers is vital because parental (or caregiver) involvement is paramount to successful treatment - if they are ready and

willing to make lifestyle changes (Oude Luttikhuis et al., 2009). Thus, MI may be an ideal method for reducing ambivalence about change and for evoking importance and increasing confidence to make healthy lifestyle changes for children identified as above healthy weight.

To acquire competency in MI, clinicians are required to develop proficiency in eight skills; "(1) openness to collaboration with clients' own expertise, (2) proficiency in client-centred counselling, including accurate empathy, (3) recognition of key aspects of client speech that guide the practice of MI, (4) eliciting and strengthening client change talk, (5) rolling with resistance, (6) negotiating change plans, (7) consolidating client commitment, and (8) switching flexibly between MI and other intervention styles (Miller & Moyers, 2006, p. 3)".

The training of MI is often delivered via 1 or 2-day workshops (Bennett et al., 2007; Schumacher et al., 2012). However, workshops of 1-3 days duration are insufficient, and at best provide an introduction to the method (Arkowitz et al., 2015). Current studies have demonstrated that skills learned in these workshops erode over time and do not necessarily transfer into everyday practice (Miller & Mount, 2001; Schumacher, Madson, & Nilsen, 2014; Schwalbe, Oh, & Zweben, 2014). Research on training nurses in MI demonstrated a large variation in the delivery of the training and the level of proficiency attained by the nurses after training (Bohman, Forsberg, Ghaderi, & Rasmussen, 2013; Jansink et al., 2013; Maissi et al., 2011; Mertens, Forsberg, Verbunt, Smeets, & Goossens, 2016). The overriding message from these studies was that current levels of training in MI are not sufficient to produce a beginner level of competency for nurses. For MI training to be effective and maintained, the learning needs to extend beyond introductory workshops and include continuous coaching and feedback (Arkowitz et al., 2015; Miller & Mount, 2001; Schwalbe et al., 2014).

While MI was developed initially in the adult addiction field and has been increasingly used as a therapeutic method for many health conditions – its effectiveness for promoting weight loss in adults is garnering more attention. A recent meta-analysis demonstrated MI produced greater effect sizes for weight-related outcomes compared to other health conditions in a primary health care setting (VanBuskirk & Wetherell, 2014). Furthermore, when compared to usual care, MI generally promoted greater weight loss in adults (Armstrong et al., 2011).

In examination of MI as an intervention for health issues affecting the younger population, meta-analyses demonstrate that MI is effective in changing a range of health-related behaviours in youth (Gayes, & Steele, 2014; Van Wormer & Boucher, 2004). These studies assess the effectiveness of MI across a wide range of health issues. However, MI has only recently been adopted as an intervention for children's weight problems, which means there is limited evidence for its efficacy in this area. Regarding nurse-led MI to treat children with high weight, there is even less clarity in the research.

1.4 Motivational Interviewing for Above Healthy Weight Children

In order to ascertain how effective MI is as an intervention for weight reduction for children with high BMI and to establish how nurses utilise MI in their various roles a literature review was undertaken. In particular it was hoped to investigate the effectiveness of nurse-delivered MI in primary and secondary care, for reducing body weight in high weight children.

A search for studies examining MI for high weight children was carried out separately from the search for studies investigating MI used by nurses. Therefore, the study details and search methods are described separately. The analysis of the studies will begin separately with a synthesis towards the end to determine the effectiveness of nurse-delivered MI for treating weight problems in children.

Types of studies. For studies of MI for weight reduction of children, the aim was to locate and analyse all studies, trials, random controlled trials (RCTs), quasi-experimental design studies, observations, cohort studies, and case studies, based on the premise that there would be a small number in total. Any sample size, duration and outcome were considered.

The aim differed for nurse-led MI studies, as it was anticipated many RCTs would be located. Consequently, to be included in the literature review the studies had to be RCTs. There were no limitations on sample size, duration or outcome measures. All articles were required to be published in full and in English.

Types of participants. For studies of MI for weight reduction of children, the participants needed to be aged between two and 12 years, or the parents of children in this age bracket, and above or of high weight (BMI ≥85TH percentile and above). There was no requirement regarding ethnicity, gender, or whānau socio-economic level.

The participants for the nurse-led MI studies could be of any age, health condition, ethnicity, gender, or socio-economic level. The MI had to be delivered by nurses.

Types of interventions. For studies of MI for weight reduction of children, studies were included when MI was the only intervention or was an adjunct to another form of intervention such as combined with weight loss programme, Cognitive Behaviour Therapy (CBT), Social Cognitive Therapy (SCT), or nutrition counselling. Motivational interviewing was compared to usual care, which consisted of recommendations for weight loss, body measurements, health information regarding diet and exercise, as well as to diet counselling, circuit training, cardiovascular classes, safety information, social skills training, weight loss programmes, prescribed and self-directed care, and nothing at all.

Nurse-led MI studies were included in the review when MI was the sole intervention or when MI formed part of the intervention. This meant MI was mixed with a range of

therapies such as CBT, SCT, information on various health conditions, lifestyle counselling, routine care, problem solving treatment, health assessments, information on medication adherence, learning theory, education counselling, diabetes care, exercise, nutrition counselling, guides, alcohol screening, sleep education, hypertension information, patient education, and health information. Motivational Interviewing was compared to usual (routine) care, no treatment, wait-list control, and recommendations or information on a wide range of health conditions, self-help booklets, minimal nurse contact, brief advice and telecare-support.

Types of outcome measures. The following outcome measures were considered as indicators of effective MI intervention with high weight children: weight or BMI reduction; reduced anthropometric measures; increased physical activity; increased consumption of fruit and vegetables and a decrease in fast-food, sugary food/beverages; increased self-efficacy in changing weight inducing behaviours; adherence and retention in weight loss programmes, strength and physical fitness, motivation to change weight related behaviours; health related quality of life scores (HRQoL), change in children's high weight related depression, psychosocial wellbeing and parental self-efficacy.

The outcome measures for the nurse-led MI studies were wide ranging. They extended from smoking cessation; alcohol abstinence or reduction; HbA1c, substance abuse reduction; medication adherence; increased physical activity (PA); diet changes including increased fruit and vegetable consumption as well as reduction in sugary foods and beverages and fast foods; weight or BMI reduction; reduced anthropometric measures; changes in cholesterol; changes in blood pressure (BP) either systolic or diastolic; mental health including quality of lie (QoL); illness intrusiveness; cancer pain reduction; hospital admission rates; stroke education; self-efficacy; improved breast feeding; cardiovascular risks; fatigue related to cancer; heart failure self-care; lipid profiles; diabetes knowledge; asthma related

outcomes; knowledge and barriers to weight-related treatment; and referral rates.

Search method. A wide-ranging search on the following databases was undertaken: PUBMED; PsycINFO; Social Work Abstracts; Google Scholar; www.ClinicalTrials.gov; Cochrane Central Register of Controlled Trials; EMBASE; Scopus; MINT website; Cinahl; Science Direct; Web of Science Education Research Complete (Education Source); and Index NZ. Searches occurred from 21 February 2017 to 23 August, 2017 using the search terms motivation, motivational, interview combined with child, children, youth, combined with weight reduction, management, combined with obesity, overweight, MI to locate studies using MI for children who were of high BMI. The search terms motivation, motivational, interview combined with nurses, nurse-led, combined with MI and RCTs were used to locate articles involving nurses' use of MI. Reference lists from the extracted articles and trials were also searched. Year of publication was not a predetermined criterion. The earliest record extracted was dated 1993 and the latest was in 2017.

After the search for MI for weight reduction for children was completed, the studies were grouped according to: reports based on experimental trials; single case, cohort, pilot, quasi-experimental, and qualitative observation studies; and other items such as reviews, abstracts, incomplete reports, and study designs only reports. Studies that included only the study design were followed up using an extensive return search through all databases and consultation with University of Canterbury librarian staff.

Nurse-directed MI studies were sorted into RCTs, mixed-method, nurse only interventionist, nurse and other health professional interventionist groups. Studies that were identified with incomplete results or study designs were investigated further with a return search through the databases and requests for follow-ups with University of Canterbury librarian staff.

Inclusion/exclusion criteria. More studies of MI for weight reduction with children were identified than first anticipated and as a result only RCTs were included in the review. All RCTs that included MI, whether stand-alone intervention or as a component of weight loss treatment, and trials with no assessment of fidelity to MI, were eligible. This was to ensure that a sufficient number of RCTs were retained to contribute relevant data. The inclusion criteria were; (1) study population: above healthy weight (according to BMI definition as per WHO, 2015) children aged between two and 12 years (2) intervention including weight behaviour change using MI either, on its own or as a component of an intervention (3) MI compared to another intervention, or variations of MI intensity and settings (4) any outcome measure and (5) random controlled trials.

The initial search of the databases produced 856 articles, with duplicates eliminated. After title and abstract screening, 722 articles were included. The main reason for exclusion at this stage was that the articles were not study reports, but rather were review articles. The next step involved further screening via full-text. This excluded a further 588 reports. The reasons for exclusion were based on the age of participants, MI was not used as part of the intervention, and participants were not of high weight, and incomplete data. After the decision to only include RCTs, 128 more studies were excluded. On further examination of the texts it was discovered that some studies had mixed weight participants, which led to another exclusion of articles based on participants' weight, as all participants were not specified within the above or high weight range criteria (BMI $\geq 85^{th}$ percentile and above). There remained 10 studies that were considered suitable for this review (Figure 1 and Table 1).

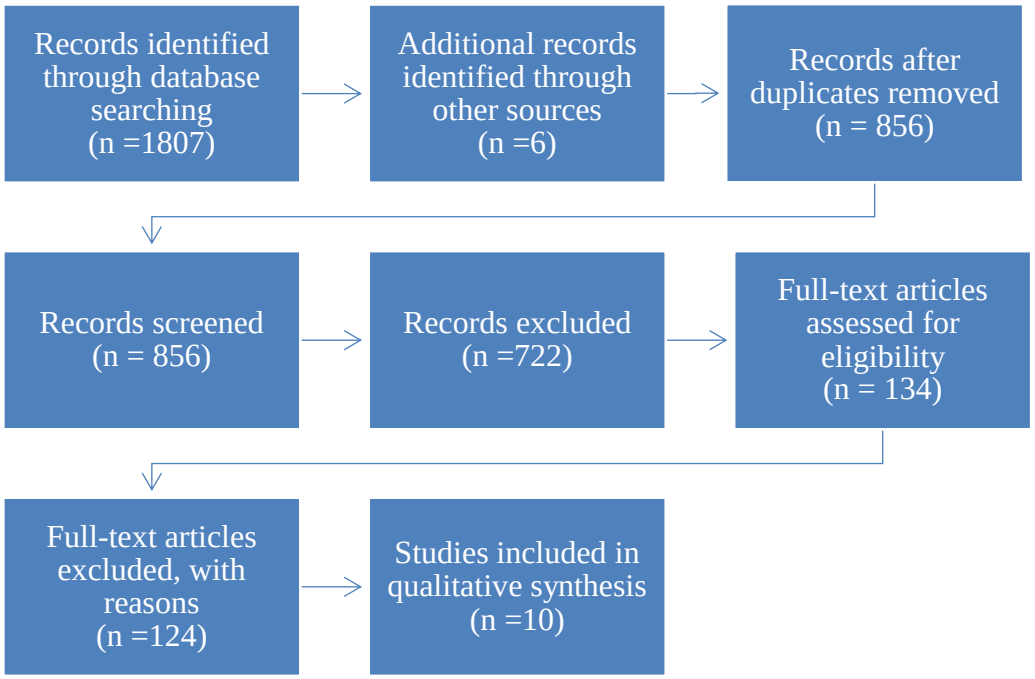


Figure 1: Flow Diagram: Studies of MI for Weight Reduction with Children

Due to the expectation that a search of nurse-led MI studies would garner an ample number of articles for analysis, as mentioned previously, the criteria to include RCTs only was established from the outset. All RCTs that included MI, whether stand-alone intervention or as a companion to another intervention, and trials with no assessment of fidelity to MI, were eligible. This maintained a level of synonymy across all studies. The inclusion criteria for nurse-led MI studies were: (1) study population: any age, gender, or socio-economic grouping (2) intervention including MI either, as sole component or as a part of the intervention (3) MI compared to another treatment, nothing, or comparing how MI is delivered, and any setting (4) any outcome measure (5) random controlled trials (6) nurse only interventionist or nurses with other interventionist.

The search for nurse-led MI studies accumulated 698 articles. Screening titles and abstracts led to an inclusion of 148 papers. The reasons for exclusion of articles was largely due to a high number of duplicates, or the articles were reviews or commentaries of studies,

some articles were not in English, or a very small number had no access to reviewing them. The next stage of article selection involved reading the full-text. This eliminated a further 85 articles. Reasons for article exclusion were based on duplication, further investigation discovered studies that were not RCTs, the studies were not nurse-led, and MI was not part of the study. After this screening process, 63 articles have been included for review (Figure 2 and Tables 2 -4).

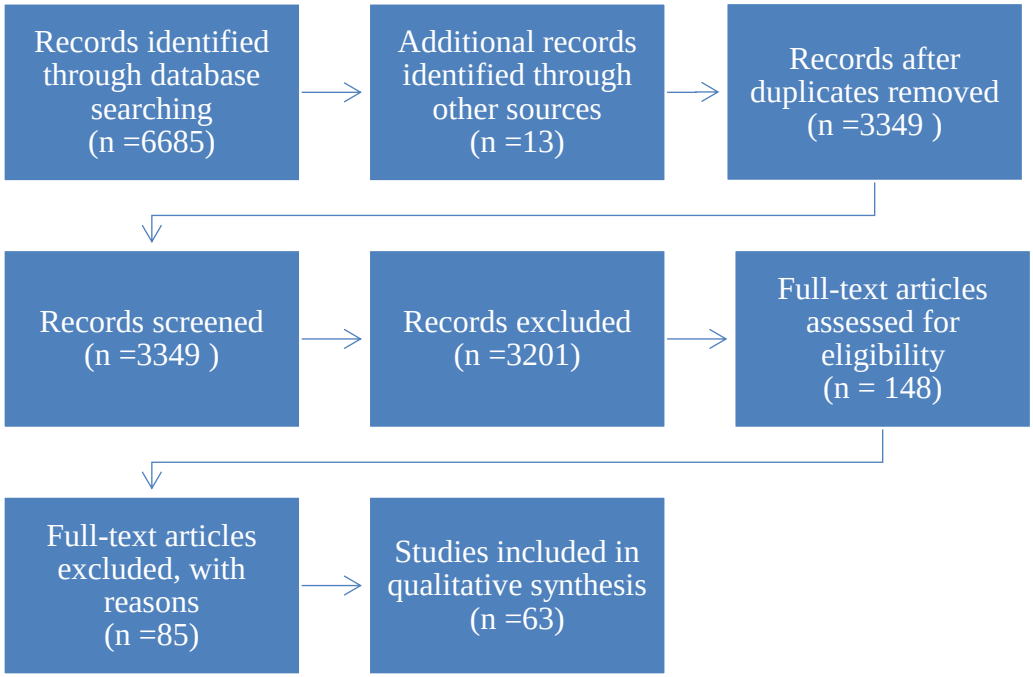


Figure 2: Flow Diagram: Studies of MI for Nurse-Led Studies

(The design features and methodological details are provided for all included studies in summary Tables 1 - 4).

Data extraction and management. Data was extracted from the studies that met the inclusion criteria. Uncertainties in relation to the inclusion of studies were clarified during supervision meetings. Data extracted included sample size, percentage of female/male, age of participants, ethnicity, demographical information, trial duration, study setting, and outcome measurements. The collected data was then stored in Endnote and on an external hard drive.

Assessment of risk of bias in included studies. Information regarding trial quality was also obtained based on: randomisation (how the randomisation process occurred), blinding, attrition, and allocation concealment; and descriptions of the MI treatment, including: the interventionist background; approach (individual, group, face-to-face, phone, internet, and parent/child dyad); delivery frequency and session times. In addition, data relating to MI fidelity was extracted, including: if the motivational interviewing treatment integrity (MITI) scale was used to measure fidelity, and if any supervision occurred.

Participants. For studies of MI for weight reduction with children dating from 1999 to 2017, the studies had sample sizes ranging from 39 to 645, with a total number of 2904. The mean number of participants was 290, and the median number was 266. 56% of the total participants were girls.

The inclusion criteria stipulated an age range between two and 12 years. The studies included children up to the age of 12, with five of the studies including children aged four years (Davoli et al., 2013; Resnicow et al., 2015; Rifas-Shiman et al., 2017; Small, Bonds-McClain, Melnyk, Vaughan, & Gannon, 2014; Taylor et al., 2013). The ethnicity varied in the studies, with most of the American studies targeting Caucasian children. The remainder were outside of the United States of America, located in Europe, the middle-east, and NZ. The participants featured mostly in the lower socio-economic demographic. All the studies involved parents, with three that involved the children in parent/child/provider dyads (Berg-Smith et al., 1999; Saelens, Lozano, & Scholz, 2013; Tyler & Horner, 2016).

The earliest study of the nurse-led MI studies included for review was dated 1999, with studies included through to 2017. The number of participants ranged from 20 to 3432, with a total of 25 141. The mean number was 399, and the median was 188. The ratio of gender was even, with slightly more male participants (51%). As there were no specifications

on age in the inclusion criteria, there were participants ranging in age from two years to 76 years of age. However, most of the studies included older participants. The mean age was 50 years and the median were 57 years. There were two studies that included young children (Döring et al., 2016; Halterman et al., 2011). Ethnicity was not mentioned in many of the studies (44%), with participants identified as Caucasian dominating those that listed ethnicity (Beckham, 2007; Borrelli et al., 2005; Dale, Caramlau, Sturt, Friede, & Walker, 2009; Davis et al., 2011; DiIorio et al., 2008; Dorr, Wilcox, Brunker, Burdon, & Donnelly, 2008; Ershoff et al., 1999; Gabbay et al., 2013; Ismail et al., 2010; Pladevall, Divine, Wells, Resnicow, & Williams, 2015; Ream, Gargaro, Barsevick, & Richardson, 2015; Steele, Wu, Cushing, & Jensen, 2013; Thomas et al., 2012; Whittemore et al., 2009). African American, Thai, Korean, Italian, Latino and Spanish were the other ethnicities mentioned in the studies.

When economic status was recorded in the studies, many of the participants were from low-middle income brackets (Beckham, 2007; Borrelli et al., 2005; Chair et al., 2013; Curry et al., 2003; DiIorio et al., 2008; Elliott-Rudder, Pilotto, McIntyre, & Ramanathan, 2014; Fischer et al., 2012; Gabbay et al., 2013; Halterman et al., 2011; Hosseini, Mokhtari, Momeni, Vossoughi, & Barekatian, 2016; Lakerveld et al., 2013; Ma, Zhou, Zhou, & Huang, 2014; Maneesakorn, Robson, Gournay, & Gray, 2007; Masterson Creber et al., 2016; Mertens, Ward, Bresick, Broder, & Weisner, 2014; Ream et al., 2015; Whittemore et al., 2009; Young et al., 2014). However, most of the studies had no record of socio-economic-status (56%).

Study design. For the MI for above healthy weight children studies (Table 1) the duration of the studies ranged from 10 weeks to two years, with one trial going well beyond these time frames with a duration of six to nine years (Berg-Smith et al, 1999). The most common duration was 24 months though, with 50% of the studies conducted over this time. The majority (70%) of the interventions took place in primary care settings, such as

paediatric offices. The settings for secondary care varied from being conducted in schools to youth health clinics. The main outcome measure for 70% of the studies was BMI, with reductions in low density lipoprotein cholesterol, health related quality of life, and referrals to lifestyle programmes completing the remainder of main outcomes.

The length of duration of the nurses-led MI studies (Table 2 - 4) ranged from two to 24 months. The most common study length was 12 months, with the average being nine months. Primary care settings such as hospitals, health clinics or health centres were by and far the most used setting for the studies. As the studies covered a varied range of outcome measures, there were many conditions considered relevant for this review. Nonetheless, there were several outcome measures that recurred throughout the studies. Health outcomes related to smoking cessation, increased physical activity, dietary changes, depression/mental health, blood pressure modifications, cholesterol profiles, diabetes related outcomes, medication adherence, alcohol reduction, and quality of life were the most common outcome measurements.

The ability to retrieve a greater amount of RCTs than expected and exclusion of studies that were not randomised, allowed for ample comparison. However, there remained significant differences in design features. Not all RCTs contained blinding of participants, personnel, or data collectors, and some had some blinding while others had blinding of all involved. Often, the data relating to blinding was not included in the articles. All the studies did account for and document attrition. Some of the trials assessed this directly, with the aim of the study being retention or adherence to treatment (Bentz et al., 2010; Berg-Smith et al., 1999; DiIorio et al., 2008; Laws et al., 2013; Ma et al., 2014; Mackenzie et al., 2012). Others reported the drop-out rates and either performed additional statistical comparisons with those who completed the treatment with those who dropped out or adjustments were made in outcome measurements to account for drop-outs. The other potential for bias was in the self-

reporting by participants or a social acceptability bias. Several studies assessed the effect on self-efficacy, diet, motivation, quality of life and physical activity. The measurements relied on self-reports. Authors stated the risk of bias in self-reporting when this method was applied. Further, this review aimed to include all the relevant studies available from databases that were searched. The potential for bias exists in the possibility of not identifying relevant articles in searching databases without a second or third person. Crucial decisions regarding what to include for analysis were made via supervision.

Delivery of MI. For the MI for above healthy weight children studies (Table 1) the delivery of MI was face-to-face contact (100%), with four studies including follow-up phone sessions (Berg-Smith et al., 1999; Dalton III et al., 2013; Resnicow et al., 2015; Rifas-Shiman et al., 2017). The length of the sessions ranged from five minutes to 60 minutes, with a brief duration of 20 to 30 minutes being the most common. The number of sessions ranged between one and six, with four the most frequent number of sessions. The interventionists varied in terms of their professional expertise, they included MI counsellors, nutritionists, dietitians, researchers, school nurses, students (doctoral and masters), physicians, and paediatricians. Regarding treatment fidelity, only two studies applied the MITI coding system to check fidelity to MI (Resnicow et al., 2015; Taylor et al., 2013). Another two studies provided weekly supervision or checklists to monitor fidelity. On the other hand, seven of the ten studies mention the type of MI training that occurred, which varied in length from eight hours to 40 hours, with most training workshops over two days.

For the nurse-led MI studies (Tables 2 - 4) MI was delivered either face-to-face and/or over the phone, with three studies failing to state how MI was delivered (Dorr et al., 2008; Drevenhorn, Bengtson, Nilsson, Nyberg, & Kjellgren, 2012; Steele et al., 2013). Session duration ranged from 10 minutes to four hours, with the most common duration being 30 minutes. The number of sessions ranged from one to 15, and five sessions was the average.

MI was delivered by a range of nurses from school nurses to psychiatric nurses. Fidelity to the intervention was ascertained in almost half of the included studies. This involved audio-recording random sessions and providing feedback. Three more studies included some supervision or monthly meetings to maintain treatment integrity and 26 of the 63 studies had no fidelity checks at all. When training in MI was specified the times ranged from two hours to 80 hours, with 20 hours training the average. Again, the number of studies that provided no training details was considerable, with 24 of the 63 omitting this information.

Results. The overall effectiveness of the nurse-led interventions trended towards MI having a positive influence on modifying a variety of health conditions (Tables 2 - 4). Regarding children (Table 1) with the main outcomes related to a reduction in BMI and biochemical measures, outcomes were demonstrative of MI providing an additive effect and also no difference. However, as there are only a small number of studies to date, the results do not definitively define the efficacy of MI in this area.

This literature review related to nurse-led MI intervention with high weight children, presented a range of challenging complexities. The reviewed studies (Tables 1 - 4) offered several clear results in terms of the effectiveness of nurse-led MI for positively changing a range of health conditions and demonstrated the possibility of MI for influencing positive change towards children's weight issues. However, there were no studies to inform whether nurse-led MI could be used effectively to refer whānau for their child's weight-related issues.

The aim for the current study was to determine how effectively nurses applied MI in referring whānau for high weight intervention based on the outcome of previous research. There were no studies found that yielded an exact comparative assessment. Nonetheless, a handful of studies assessed some aspects of this, so these studies were examined further. The features these key studies needed to include for further examination were: nurses conversing using MI with parents/caregivers of high BMI children; nurses applying MI in referring

whānau for another intervention; or nurses utilising MI in communication with parents/caregivers. These criteria were applied to capture all possible aspects of the nurse-parent/caregiver interaction that occurs in referring children for weight-related programmes. This resulted in six studies that were deemed suitable for further examination (see Table 5).

Table 5: Key Studies for In-Depth Review

Reference: Author and Year	Sample size, participants, duration & location	Intervention outcomes	Comparator intervention	MI intervention	MI interventionists (includes training) and MI fidelity	Health Behaviour Change results as reported by the author(s)
Halterman, 2011.	530 school students. 7 years age. 58% male. 63% African American. Low SES. 67 schools in the U.S.A. 3 months duration. Blinding details unavailable.	Mean number of asthma symptom-free days per 2 weeks during the peak winter season (November to February).	Usual care group encouraged to contact their doctor.	MI applied for increasing daily asthma medication and to reduce smoking. Delivered via 1x in-home face-to-face session for 20-30 minutes. 2x phone calls 10-15 minutes. Focus on smoking cessation. With parents/caregivers.	School nurses trained in MI. Audiotaped sessions and reviewed for fidelity.	Continuous variables analysed using linear mixed-effects model. IG had more symptom free days than CG. November p=0.00 2, January p=0.005 and February p<0.001.
Steele, 2012.	526 nurses. 49 years mean age. 99% female. European American 94%. School nurses across the U.S.A. no duration entered. Blinding details unavailable. Difficulties in recruiting participants.	Knowledge, barriers to providing weight treatment, and intended practices.	Wait-list control.	MI techniques the focus with lowering barriers viewed as the key to successful conversations.	Child Health Matters web-based tutorial designed to improve school nurses' weight-related conversations with whānau. Approximately 4.7-hours training. No fidelity checks	ANOVA analysis with paired sample t-test conducted. After training, the largest changes to nurse's communication were a reduction in skills-related barriers and societal factor barriers p<0.001, job related barriers reduced p=0.001, ability to assess PA increased p=0.001, and intention to assess PA increased p=0.001.

Reference: Author and Year	Sample size, participants, duration & location	Intervention outcomes	Comparator intervention	MI intervention	MI interventionists (includes training) and MI fidelity	Health Behaviour Change results as reported by the author(s)
Taylor, 2013	197 children aged 6 years. 108 girls. Mostly pakeha (Caucasian). Low-mid SES. BMI ≥85th percentile. 9 primary care practices or secondary care clinics in the south of NZ. 24-month duration.	Assessment of increased recruitment into a lifestyle service.	BPC included a traffic light system to provide weight-related feedback to parents. Avoided use of overweight or obese terminologies.	MI used to explore knowledge and expectations around their child's weight status before providing BMI results. MI delivered face-to-face with parents/caregivers individually for 1 30-minute session.	Trained researchers delivered MI. The 40-hours training occurred over 3-months. This was completed both on-line and during a 2-day workshop. Sessions that were video-recorded were coded (MITI) and researchers given feedback. They were not highly proficient but had good fidelity to MI spirit.	Independent t-tests and multivariate regression and univariate analysis used with an Intent-to-treat analysis. MI and BPC were both successful techniques for referring parents. No differences in recruitment p=0.17. Parents in the MI group had higher self-determined motivation for healthier lifestyles
Tyler. 2015	74 children aged 8-12 years, mostly Hispanic, 42 girls. Low SES. BMI ≥95th percentile. 9 months duration. U.S.A. School-based health clinics No blinding	BMI, QoL, and biomedical measures.	Weight management information provided.	Same weight management information given, and 5 MI based counselling sessions were delivered face-to-face with child/parent dyad and lasted 30 minutes. .	The school nurse conducted the counselling sessions. Counselling based on MI techniques. No mention of training. No fidelity	Repeated measures analysis of variance and covariance in hierarchical linear model approach were used. LDL-C remained in the normal range for the intervention group but not the comparison, with a difference of (p=0.03). Cholesterol and triglycerides remained on a better trajectory also. BMI z-scores significantly lower for both groups (p=0.005). There were no significant differences between groups for QoL, as both groups reported an increase over time. Compared to those who dropped out, BMI (p=0.036), insulin levels (p=0.014), QoL (p=0.047) and waist circumference (p=0.03) were higher in the drop-out group, compared to MI group.

Reference: Author and Year	Sample size, participants, duration & location	Intervention outcomes	Comparator intervention	MI intervention	MI interventionists (includes training) and MI fidelity	Health Behaviour Change results as reported by the author(s)
Doring, 2016	1355 whānau and 1369 infants. 54% male infants. 9 months – 4 years age. 94% Swedish born. Child health care centres in Sweden. 39 months. Blinding details unavailable. Attrition rate of 16.1%.	Primary outcomes: BMI, weight prevalence and WC by the age of 4. Secondary outcomes: food and activity habits, and mother's anthropometric measurements.	Control group received usual care.	SCT and learning theory-based intervention. MI and CBT applied for health promotion. Delivery; 1 group session, 6 face-to-face individual and 2-phone. Focus on healthy food habits and PA. With parents/caregivers.	Nurses were trained in a 5-day course on MI, CBT, nutrition and PA. MI was assessed with recorded sessions with feedback.	Intent-to-treat analyses. No differences between infants' weight prevalence p=0.80, BMI p=0.26, WC p=0.07, percentage high weight p=0.78, PA p=0.81, sedentary behaviour p=0.87. No differences between mothers' BMI p=0.67, WC p=0.30, or prevalence of high weight p=0.62.
Chahal, 2017	32 adolescents 13-14 years, 62% male no ethnicity, income level or BMI specified. Lipid clinic in Southern Ontario, Canada. 6-months duration. Blinding details unavailable. 100% participant completion rate.	Change in fasting lipid values, diet and exercise, BMI, waist measurements, psychosocial well-being and QoL.	MI alone or with parental dyad.	MI focus on lifestyle behaviours that affected the health of the adolescents. 4 individual face-to-face sessions for 30-45-minutes (either alone or dyad). 4 phone sessions for 30-45-minutes.	Nurses trained in advanced MI in two 3-day workshops, with regular practice sessions. Fidelity: sessions with adolescents recorded and coded using MITI coding system. High scores were achieved.	Changes between groups assessed using repeated measures methodology. There were no significant differences between groups in physical, lab, lifestyle or psychosocial measures, except for a reduction in dietary fats/sugars ($p = 0.02$) screen time ($p = 0.02$) in the alone group. When both groups were combined, significant reductions at 6 months were noted for BMI ($p < 0.001$), WC($p < 0.001$), total cholesterol ($p < 0.001$), LDL-C ($p < 0.001$), triglycerides ($p = 0.01$), non–HDL-C ($p < 0.001$), fasting insulin ($p = 0.01$), and homeostatic model ($p = 0.02$). Reduced screen time and increased fruit and vegetable intake were noted for both groups. These changes also reflected in self-efficacy ($p = 0.004$), self-esteem ($p = 0.03$), and improvement in QoL measures.

The wide variation in the research methodologies combined with a limited number of studies, made it problematic to confidently conduct a comparison of results. The characteristics of the studies that trended towards findings in favour of MI had some similar features and unique differences. To better understand these moderator effects, the next step is to evaluate the defining aspects that were common across the key studies (Table 5) that relate to this research. Due to the very limited number of included key studies, the results need to be considered with caution.

All of these studies, apart from Steele (2013), reported the number and duration of the MI sessions. The average number of sessions was five, with the least being one (Taylor et al., 2013) and the most sessions being nine (Döring et al., 2016). The average MI session lasted 30 minutes, with 10 minutes duration the least and 45 minutes the longest (Chahal et al., 2017). The delivery ranged from over the phone, individual face-to-face, and group MI. The nature of MI as a brief and flexible intervention is demonstrated in the variation of delivery across the studies. More sessions did not necessarily equate to significant change in outcome and yet only one session may have been insufficient.

Of concern, however, is that not all studies included fidelity checks. Of the studies in Table 5, two failed to check the fidelity of intervention (Steele et al., 2013; Tyler & Horner, 2016). Without the fidelity checks the certainty of the treatment delivered is open to speculation. The remaining studies reported checking for treatment integrity, and two provided MITI results (Chahal et al., 2017; Taylor et al., 2013). The MITI instrument is used to assess the level of proficiency in MI delivered by a practitioner using MI. The tool gauges the technical skills specific to MI that are applied in a counselling conversation such as, MI adherent behaviour, the number of closed and open questions used, and the frequency of complex and simple reflections. Further, the global ratings attributable to the levels of empathy, MI spirit, autonomy support and collaboration are required in an effective MI

session. Applying the MITI scale or another form of fidelity check is vital for ensuring MI is at least used during the intervention.

Further, these studies supplied only brief accounts of the training the interventionists undertook, and one study omitted these details (Tyler & Horner, 2016). Of the remaining five, only two studies reported a level of training that exceeded two days (Chahal et al., 2017; Taylor et al., 2013), which is in contrast to recommendations for MI training.

Not all the studies compared MI with just usual care, there were alternative interventions (Taylor et al., 2013) and comparing the delivery of MI (Chahal et al., 2017). Yet, when MI was assessed against standard care, by in large the results trended towards favouring MI. All of these studies had nurses using MI, with the exception of Taylor et al. (2013) which included trained researchers. Three studies included school nurses (Halterman et al., 2011; Steele et al., 2013; Tyler & Horner, 2016), with the other two studies comprising nurses from clinical settings. Regarding parental involvement all the studies included details of parents/caregiver's involvement, except for Steele (2013) which only mentioned nurses communicating with whānau. When the nurses used only MI to communicate with parents the outcome was positive. In relation to nurses using MI to communicate weight with parents, three studies (Chahal et al., 2017; Döring et al., 2016; Tyler & Horner, 2016) assessed this. Two yielded positive results in favour of MI.

One study (Taylor et al., 2013) evaluated MI for referring whānau for weight treatment, using researchers trained in MI. The study compared MI with another feedback system and usual care. Whilst there was no additive effect using MI, parental motivation was greater in the MI group (Taylor, Williams, Dawson, Haszard, & Brown, 2015).

Some barriers to weight intervention emerged from some of these studies. (Taylor et al., 2013) which found that parental misperception of child weight and low levels of motivation as impacting the most on intervention uptake. Steele (2013) addressed the nurses'

perceived barriers to weight counselling via a web-based programme (Child Health Matters, www.child-health-matters.org) that focussed on specific weight information and improving weight-related communication (using MI) with whānau and found significant improvements after this training. The nurses reported less perceived barriers when it came to discussing weight with whānau (Steele et al., 2013).

1.5 Discussion

Considering the dire weight statistics with regard to children, a range of approaches have been recommended to treat the problem, including improving health professionals' weight-related communication. The biggest barriers to communication are lack of provider confidence and parental non-acceptance of the health issue, ambivalence or low motivation for change. To overcome this effective counselling skills are required. In NZ, the issues regarding weight-related conversations are reflective of the broader global experience – health practitioners are still grappling with replacing the directive approach with more client-centred methods. For this, MI has been suggested as an ideal client-centred method for health practitioners to learn.

Regarding the efficacy of nurse-led MI, the research evidence suggests that MI can be used effectively by nurses to positively change the outcome of a range of health conditions. The evidence for the effectiveness of MI to treat child weight problems is an underexplored area. What is unknown is the effectiveness of nurse-led MI to either refer on for weight reduction intervention or to treat children's high weight. The few studies currently available offer the sense of possibility that MI could be an effective tool for nurse-led weight treatment referrals, but again the results are limited and warrant further exploration. With the focus by the NZ government to capture and intervene with a significant number of high weight four-year olds, effective nurse-led communication during the B4SC is vital. Currently, it is unclear what communication methods B4SC nurses use during this weight-related conversation.

Considering B4SC nurses are responsible for referring whānau for weight intervention, there needs to be a better understanding of this process as it is currently being undertaken.

Due to the lack of available evidence concerning nurse-led MI for referring whānau for weight interventions and the uncertainty around what communication methods the B4SC nurses use during the weight referral process, research is urgently required. The current research sought to explore the nurses' experience of the weight-related conversation, with an aim to begin to understand better the communication methods used during this conversation and if it included any use of MI to assist with the referrals. Regarding nurses' use of MI, the aims were to find out the nurses' experience of using it, what the MI training consisted of in terms of type and duration - and if that was adequate, and any perceived barriers to learning or using MI. Further aims were to explore the barriers experienced conducting this type of sensitive conversation and what facilitated successful referrals. Finally, it was hoped to identify training and support the nurses need to enhance their ability to communicate effectively on child weight related issues.

Chapter Two - Research Methodology

2.1 Introduction

This chapter outlines how this research was developed. The chapter begins with project design, and the advantages and disadvantages of selecting on-line surveys and interviews. This is followed by data analysis methods selected and the reasons for selection. The second half of the chapter outlines the development of the survey and interviews. The conclusion of the chapter describes the procedures used for data collection.

2.2 Research Design

The aim of the study was to gain an understanding of the experience of B4SC nurses during weight-related conversations. To achieve this, a qualitative, interpretive phenomenological methodology was chosen because it allowed the researcher to engage with participants in a way that discovered parts underlying meanings and understandings. Phenomenological methodology explores and seeks to access the world as it is experienced pre-reflectively (Van Manen, 2014). The interpretive phenomenological approach seeks to understand the meaning of the experience and how this impacts on the individuals involved (Matua & Van Der Wal, 2015). Furthermore, this method allowed for the understanding and prior knowledge of the researcher to be blended into the experience investigated (Matua & Van Der Wal, 2015). As this project was developed without a hypothesis, the design allowed for the nurses' reflections to form the structure of the study. This is aligned with the research questions in the on-line survey and interviews which focussed on the nurses' experience and understanding of the phenomenon studied.

2.3 On-line Survey Tool

Advantages of on-line surveys. The project sought to understand the nurses' experience and by using an on-line questionnaire it was hoped to attract a diversity of

experience. One of the advantages of using on-line anonymous surveys is the decreased risk for social desirability bias (Evans & Mathur, 2005). The absence of an interviewer reduces the need for participants to offer socially progressive responses. Moreover, on-line surveys can serve as a platform for the respondents to express their in-depth knowledge on the phenomena (LoBiondo-Wood & Haber, 2010). Furthermore, by selecting on-line surveys it provided a cost-effective, convenient, less intrusive, and a familiar tool used for and with nurses (Evans & Mathur, 2005). For this research Qualtrics was utilised for developing the survey because it provided the system for designing, administering, and monitoring questionnaires, and the instant tabulation of results. Privacy and security are advantageous features that can be facilitated effectively using Qualtrics by creating anonymous surveys.

Disadvantages of surveys. Although the reasons are not fully understood, one of the biggest disadvantages to using on-line surveys is the low response rates associated with it. A down-side to using on-line surveys is that once in an already busy mail-box, the questionnaire can be easily ignored and viewed as junk mail. To mitigate this, the survey was issued via Pegasus Health PHO a familiar and trusted organisation. Electronic reminders were automatically issued using the same source. In anticipation of the time demands on nurses, the invitation letter stipulated the survey was short and would only take up to five minutes to complete. Another drawback is the inability to accurately calculate the response rate prior to administering the survey. As this survey was not a requirement for the nurses to participate, there was an increased risk for a low response rate. However, the invitation to participate made every attempt to rouse survey involvement by alleviating time pressures, ensuring confidentiality/anonymity, and encouraging the nurses to have their say. Finally, there are risks that on-line questionnaires are not fully understood and/or that only partial answers are supplied (Allen, 2017). To avoid the potential for misunderstanding questions, the survey was read and approved by Pegasus Health PHO personnel prior to being issued, this ensured the

questions were to a familiar standard for the nurses involved. Furthermore, Qualtrics has an option to alert responders if they had not answered in full or completed the entire survey and this was applied.

2.4 Interviews as a Data Collection Method

Advantages of interviews – face-to-face and telephone. The greatest advantage to face-to-face interviews is that it enables the gathering of more information and allows for deeper probing of those sharing their experience. The face-to-face nature of the interviews has the added advantage of providing information beyond the words uttered. Body language, tone and other social cues enhance the meaning of the experience shared by the participant (Opdenakker, 2006). Furthermore, semi-structured interviews, when conducted well, provide a forum for the participants to elucidate on their responses. It allows for the expansion of their interpretation of the experience (Opdenakker, 2006). Semi-structured interviews have the added benefit of the conversation not only guided by the researcher but allows space for any topics that emerge.

Focus groups share many similarities to individual interviews in terms of offering meaningful data. What they add is bringing together a group of people with a shared experience (Given, 2008). Similarly, the conversations can be semi-structured and steered by the researcher, but rather than learning more about the individual participant, the group setting allows for a range of perspectives (Given, 2008).

Telephone interviews have the advantage of flexibility. They can be conducted at any convenient time, without travel involved, and offer a greater level of confidentiality than face-to-face (Opdenakker, 2006). The disadvantage is the reduced ability for the researcher to observe social cues, specifically body language.

Disadvantages of interviews. The risk for bias in conducting interviews relates to participants providing socially accepted responses (Davis, Couper, Janz, Caldwell, & Resnicow, 2010). Positive self-promotion can occur to increase the sense of reward or to avoid negative consequences (Davis et al., 2010). Regarding focus groups, there are some arguments over whether participants are further biased by the inclusion of other interviewees (Given, 2008). Moreover, the presence of the interviewer can impact on how questions are answered. Interviewer error occurs because the same interview administered by different interviewers could evoke entirely different responses (Davis et al., 2010). Face-to-face interviews eliminates anonymity, which can impact on participation. Another drawback is the time involved in travel and participation.

Other research designs considered. The initial concept of the survey was to collect data from Before School Check nurses nationwide. However, this was deemed impracticable due to the scope and duration required for this type of data collection/analysis. Additionally, the original idea for the interviews was to talk to the parents/caregivers of children that had been identified as $\geq 98^{th}$ BMI percentile and referred for this. This was rejected to avoid adding further pressure on these parents/caregivers.

2.5 Data Analysis

Descriptive statistics. The use of descriptive statistics was chosen as a method because it uses numerical and graphical techniques to classify, present and analyse data (Fisher & Marshall, 2009). The application of this method in the analysis of the survey defined measures of percentages and frequency of Likert scale data.

Qualitative thematic analysis. A thematic analysis (Braun & Clarke, 2006) was used to ascertain the major themes and features drawn from the answers provided in the interviews. The themes related to the nurse's perceptions of their competence in

communicating with parents/caregivers of high weight children. In addition, thematic analysis allowed for the identification of themes and patterns that emerged from the interview data in the processes for handling children's weight problems.

Thematic analysis is a clearly defined six step process that involves repeated reading of the text and constant transformation of words spoken into major themes. It is easy to learn and with supervision, can be easy to implement. It is clearly explained and is therefore easy to learn for a novice researcher (Braun & Clarke, 2006). The six steps involve; transcribing data with initial ideas noted; coding the data with a systematic approach to begin organising themes; identifying themes from coded data and other potential sources; reviewing themes by checking through the coded data and producing a thematic map of the analysis; defining and naming themes; and producing the final report of the analysis (Braun & Clarke, 2006).

Coding and identification of themes is a process that needs to be thorough and inclusive as it is the integral phase of thematic analysis. Organisation of the raw data is fundamental to the overall process of analysis (Tuckett, 2005). When coding is done systematically across the entire data set, chunks of data relating to the research question are identified. These can vary in size from one line to many lines of data. Coded data can be coded more than once and can overlap. Any data that is deemed relevant is coded. It is important for coding to be concise and attempt to capture the underlying meaning of the data item (Braun & Clarke, 2006). Constant reviewing and repeated reading is crucial during this part of thematic analysis.

Software can be used for the coding process, but it is quite common for hard-copy data with chunks of highlighted text to be used for coding. For this project, hard-copy data was coded initially before applying the cut and paste features in Microsoft Word and Excel.

Pieces of coded data were extracted from the entire data set and assembled in tables (both Excel and Microsoft Word) according to themes.

Thematic analysis is deemed a flexible approach that can be used across a range of qualitative research. As this analysis is data-driven, thematic analysis was considered the most appropriate approach because the research aimed to provide a comprehensive account of the participants' views as opposed to determining a theoretical perspective (Cooper & American Psychological, 2012). This inductive approach meant the codes and themes were governed by the substance of the data (Cooper & American Psychological, 2012). Nonetheless, as the literature suggests, it is difficult to remain strictly inductive because the researcher will inevitably bring preconceived ideas to the data (Braun & Clarke, 2006). Therefore, the phenomenological approach to the project, acknowledges the researcher's understanding as part of the analysis process (Matua & Van Der Wal, 2015).

2.6 Measures

Survey development. Prior to developing the survey questions *The Sage encyclopedia of qualitative research methods* (Given, 2008) in conjunction with similar studies were consulted to better understand the types of questions needed to understand the nurses' knowledge, skill and confidence during weight-related conversations (Bonde, Bentsen, & Hindhede, 2014; Brobeck, Bergh, Odencrants, & Hildingh, 2011; Brobeck, Odencrants, Bergh, & Hildingh, 2014; Lundberg, Jong, Kristiansen, & Jong, 2016; Ostlund, Wadensten, Haggstrom, Lindqvist, & Kristofferzon, 2016; Ostlund, Wadensten, Kristofferzon, & Haggstrom, 2015; Pollak et al., 2016; Söderlund, Malmsten, Bendtsen, & Nilsen, 2010; Söderlund, Nordqvist, Angbratt, & Nilsen, 2009). These studies served as preparation for the development of questions. Initially the questions were developed to allow

for open-ended written answers, without consideration for the time that would take. For example,

1) What is your understanding of motivational interviewing?

2) If you are not familiar with motivational interviewing, what shared-decision making strategies do you use for changing behaviour?

After reworking the questions, the survey was constructed to obtain data on personal details, professional expertise, training, attitudes to lifestyle counselling and the barriers experienced (see Appendix G for the full list of questions). Consideration was directed to the time it would take to complete the survey and ease of participation. The questions had to be clear, concise and designed to improve data collection and not overload the respondents. This was achieved through question diversity. Questions were either yes/no, multi-choice, open-ended or rank ordered using the Likert scale. The Likert scale is used extensively in surveys as a measure of attitudes, ideas, or knowledge on a phenomena (Allen, 2017). Using the traditional Likert scale format, the questionnaire was devised with a series of statements with corresponding responses ranked in order of agreeance.

The first section comprised personal details, questions one to four, covered gender, age, and work experience. Each question was multi-choice. Question 5 assessed confidence in identifying, addressing and referring children that presented ≥98th BMI percentile. MI and HBC training experience and adequacy, and confidence were addressed in questions six to 11. The six questions on attitudes to lifestyle counselling explored thoughts on patient autonomy, motivation and role of nurse in this. Questions 18-24 explored the barriers to effective weight-related communication, such as patient resistance, non-acceptance of the health problem, lack of confidence, and practical conditions. The remaining section of the survey explored attitudes to MI – the associated possible benefits and barriers to utilisation.

The research questions and survey duration were altered to meet Pegasus Health PHO approval. There were requests to modify some wording and questions in the survey and information letter (see Appendix D). The wording obese child(ren) was amended to "children identified as above a healthy weight" and Q3. "How long have you been in your current role as a practice nurse?" Was altered to, "how long have you been in your current role? The question concerning gender was changed from 'other' to 'gender diverse'. The question, "During the before school check and regarding the process of identifying, addressing, and referring onto lifestyle services high weight children, how difficult do you find this task?", was separated into three answers on identifying, addressing, and referring. The use of Qualtrics to construct the survey allowed for multiple questions to be grouped and scaled into 5-point Likert Scale answers, shortening the duration of the survey. For example,

Q11 - MI can be a useful tool for discussing healthy weight in children with their families/ whānau, how confidently do you think you can use it for this purpose?

Extremely confident

Somewhat confident

Neither confident nor unconfident

Somewhat unconfident

Extremely unconfident

Not applicable as I haven't been trained in MI

Interview development. The semi-structured interview questions were developed to expand upon the interviewee's experience and perspective during weight-related B4SC consultations. To allow for free-flowing personal reflections, a question guide was prepared based on a similar format to the survey. The first section covered professional expertise –

"How long have you been in the role as B4SC nurse?", followed by their experience in identifying and referring high weight children – *"Tell me about a time when you have identified a four-year old as above a healthy weight and you have successfully (or not) referred whānau /caregivers?"* – confidence was addressed in the next section – *"How confident do you feel in having weight-related conversations with parents/caregivers of above healthy weight four-year olds?"* – training, confidence, and use of MI was touched upon, – *"What training in MI have you had and if so, was that sufficient?"* "*how confident do you feel using MI?", "how prepared do you feel to have an effective MI conversation with parents/caregivers?"*– barriers to effective weight-related conversations was covered – *"What inhibits or what challenges have you had when talking with parents/caregivers?"* – and finally, any additional support needed, *"What support would you feel you would benefit from?".* There were also a series of open-ended questions with reflections on the nurses' practice that allowed for the nurse to reveal what methods of communication they employ, what affect this has on the patient-provider relationship, how they address the requirement to refer children for weight issues and what inhibits or facilitates a referral (see Appendix H for the question guide to the semi-structured interviews).

The questions asked related to the nurses' experience during the B4SC, focussed on weight-related conversations. The key areas covered were; expertise (length of time in service, including as a B4SC nurse); experience communicating with parents/caregivers of high weight children, including why the referral was either successful or not; the barriers and facilitators experienced during these conversations; confidence in conducting weight-related conversations; using MI, including training, confidence and use of; and any other support required.

2.7 Procedure

Ethical consideration, informed consent and data storage. The key ethical implications related to this research involved the processes for data collection. The Human Ethics Committee (HEC) ensured the research was voluntary, the participants were provided appropriate information, confidentiality/anonymity was addressed, risk for harm assessed and adequate supervision confirmed for the duration of the project. Some amendments concerning anonymity/confidentiality, time frames for the interviews, who would have access to the data, the identification of Pegasus Health PHO in the final report, and consultation with Ngāi Tahu were required for final approval (see Appendix A). Following ethics approval on the 6th of June, 2017 (see Appendix B), authorisation from Pegasus Health PHO was needed. Consent, research information and all questions were sited and approved by key Pegasus Health PHO staff members prior to data collection (see Appendix C).

Participation in the on-line survey was strictly anonymous. Anonymity was achieved by using two methods; firstly, the invitation to participate and information/consents forms were sent via the Pegasus Health PHO database. This meant all IP addresses belonging to B4SC nurses remained anonymous to the researcher. The invitation included a link to the survey which was devised using Qualtrics. This system had the function to utilise anonymous links, which safeguarded participants' personal details guaranteeing they remained unidentifiable.

Once the nurses indicated participation in face-to-face interviews, identities were known to the researcher only. To assure confidentiality, all recorded interviews were devoid of any mentioning of names or other identifiable details. Furthermore, the transcriber was required to sign a confidentiality agreement (see Appendix I) and a number code was applied to the audio and written transcripts.

All participants were provided an information/consent form that included researcher details and contact information, the reasons for the research, the process for storage, security measures to be implemented, and inclusion of the opportunity to view documents and to withdraw at any time if they wished (see Appendix E and F).

Survey data was stored on both Qualtrics and Excel. Qualtrics can only be accessed with private username and password details. The data on Excel was kept on password protected hard-drives. No paper copies were made. The audio files and transcribed data were stored on password protected hard-drives. All paper copies were stored in locked drawers. Data Disposal of recorded data will follow University of Canterbury guidelines in due course.

Participants, sampling, and recruitment method. Pegasus Health PHO was consulted with to gain access to the participants. The participants in the study were registered nurses involved in the B4SC programme located in the Canterbury region. Pegasus Health PHO is currently involved in the roll-out of the Raising Healthy Kids initiative which means B4SC nurses are responsible for ensuring that 95% of identified high weight four-year olds are referred onto a lifestyle co-ordinator. The nurses were of any gender, ethnicity, age, and experience level.

Nurses were invited via email to take part in a two-level design study. The first of which was the on-line survey and then an additional invitation to take part in interviews. The information letter outlined the study aims and described the level of participation required if the nurses opted in. The email expressed that completing the survey did not necessarily mean having to take part in interviews. Furthermore, participation in interviews would be acknowledged with a coffee voucher.

Data collection

On-line survey. Pegasus Health PHO tested the survey tool prior to inviting the nurses to participate. This was necessary to ensure the duration was satisfactory, wording was correct, and the tool easy to use. After officially issuing the survey, electronic reminders were sent twice before the closing of the survey. The first reminder was issued two weeks after the initial invitation to participate and the final reminder two weeks following that.

At the time of recruitment, 108 nurses were contacted via the Pegasus Health PHO database. The information/consent letter was distributed outlining the purpose of the research and inviting participation via an anonymous link. Despite the two automatic reminders issued, only twenty-four B4SC nurses agreed to take part in the survey. Of these, 18 completed the entire questionnaire.

Interviews – individual, focus group, and telephone. The invitation to participate in the project outlined the two-step process for participation. At the completion of the survey a final question requested participation in interviews – either focus group or individual – and the positive respondents supplied contact details.

Of the 18 participants who completed the survey, nine of the respondents declined further involvement in interviews and of the remaining nine, seven agreed to partake in the interviews, with two pulling out before interview commencement. Five nurses arranged meeting times, with one of the nurse's colleagues wishing to participate in a focus group interview. Out of the eight interviewees, one was via phone, three individual face-to-face, and four contributed in a focus group. The telephone interview was at the request of the participant and accepted to boost participation numbers.

2.8 Chapter Summary

Following approval from the Human Ethics Committee at the University of Canterbury and Pegasus Health, an on-line questionnaire and interviews were conducted to gain an insight into the weight-related communication experiences of Before School Check nurses in the Canterbury region. The survey obtained data pertaining to the nurses' personal details, professional expertise, MI and health behaviour change training, attitudes to lifestyle counselling and the barriers experienced. The interviews were designed to enable the researcher to probe further into the experience of the nurses. The interviews complimented the survey, in that they asked similar questions regarding barriers, training in MI, use of MI, their confidence in discussing weight-related information, and what is needed to help with this.

Chapter Three – Research Results

3.1 Introduction

The first section of the chapter outlines the survey participation response rate, details the results of the socio-demographic profile of the survey responders, and the results of the survey in relation to the research questions. The second part of the chapter covers demographic information on the interview participants, and the results of the qualitative data analysis – thematic analysis – that was performed. Finally, the overall results of both the survey and interviews are presented in relation to the research questions.

3.2 Online Survey

Response rate. Emails inviting participation were sent via Pegasus Health PHO to 108 potential participants, resulting in a 19.4% response rate *n=20.* Of the respondents one declined participation and 20 began the survey, with 18 completing every question. Of the 18 participants who completed the entire survey, seven agreed to partake in the interviews, with two pulling out before interview commencement. Of these, five arranged meeting times. One of the five nurses requested a focus group interview with three of her work colleagues, resulting in a final participation rate of *n=8*. Out of the eight interviewees, one was via phone, three individual face-to-face, and four contributed in a focus group.

Socio-demographic profile of survey responders. This section details the characteristics of the responders to the on-line survey. The results are displayed in Table 6. All the participants identified as female, with 80% of the survey responders aged between 35 – 54 years of age. The mean age of the respondents was 43 years with a standard deviation (SD) of 11.2 years. There was a mixed spread of experience, with 85% of the participants stating they had worked in the role between one and 15 years, with a mean length of time in

current service 8.9 years, with a SD of 5.5 years. Most of the nurses worked in general practice (75%), with the remainder from mobile and public health services.

Table 6: Socio-Demographic Profile of the Participants in the On-Line Survey

		Study sample	**%**	**Female**	**%**
Total		**20**	**20**	**20**	**20**
Gender		**20**	**100%**	**20**	**100%**
Age (years)		**20**	**100%**	**20**	**100%**
	25 – 34	2	10%	2	10%
	35 – 44	8	40%	8	40%
	45 – 54	8	40%	8	40%
	55 – 64	2	10%	2	10%
Length of time (years) in current role		**20**	**100%**	**20**	**100%**
	1 – 5	7	35%	7	35%
	6 – 10	4	20%	4	20%
	11 – 15	6	30%	6	30%
	16 – 20	2	10%	2	10%
	20 +	1	5%	1	5%
B4SC service provider		**20**	**100%**	**20**	**100%**
	Public Health	2	10%	2	10%
	General Practice	15	75%	15	75%
	Mobile Rural	1	5%	1	5%
	Mobile Urban	2	10%	2	10%

Research Question: How confident do the B4SC nurses feel in communicating with parents/caregivers of above a healthy weight four-year old, so that the parents/caregivers understand the health issue and want to be involved in lifestyle programmes?

In the second section of the on-line survey, the nurses were asked to convey their confidence in identifying, addressing, and referring children who presented above a healthy weight (Figure 3). They were asked to rate their answers on a 5-point Likert scale rating ranging from extremely easy, somewhat easy, neither easy nor difficult, somewhat difficult, and extremely difficult. Identifying children who were ≥91st BMI percentile was reported to be easy with 80% of the responders finding it either extremely easy or somewhat easy to

identify such children. No-one considered it somewhat or extremely difficult to identify high BMI children.

Addressing high weight children was more of a challenge for some of the nurses with 45% reporting that it was either somewhat or extremely difficult. Still 40% found it easy or somewhat easy to address the issue.

As with addressing high weight, referring above a healthy weight child and their parents/caregivers proved a challenge for some nurses. Again 45% stated it was either somewhat or extremely difficult to refer, with 35% finding it extremely or somewhat easy. The remaining 20% stated that it was neither easy nor difficult to address or refer.

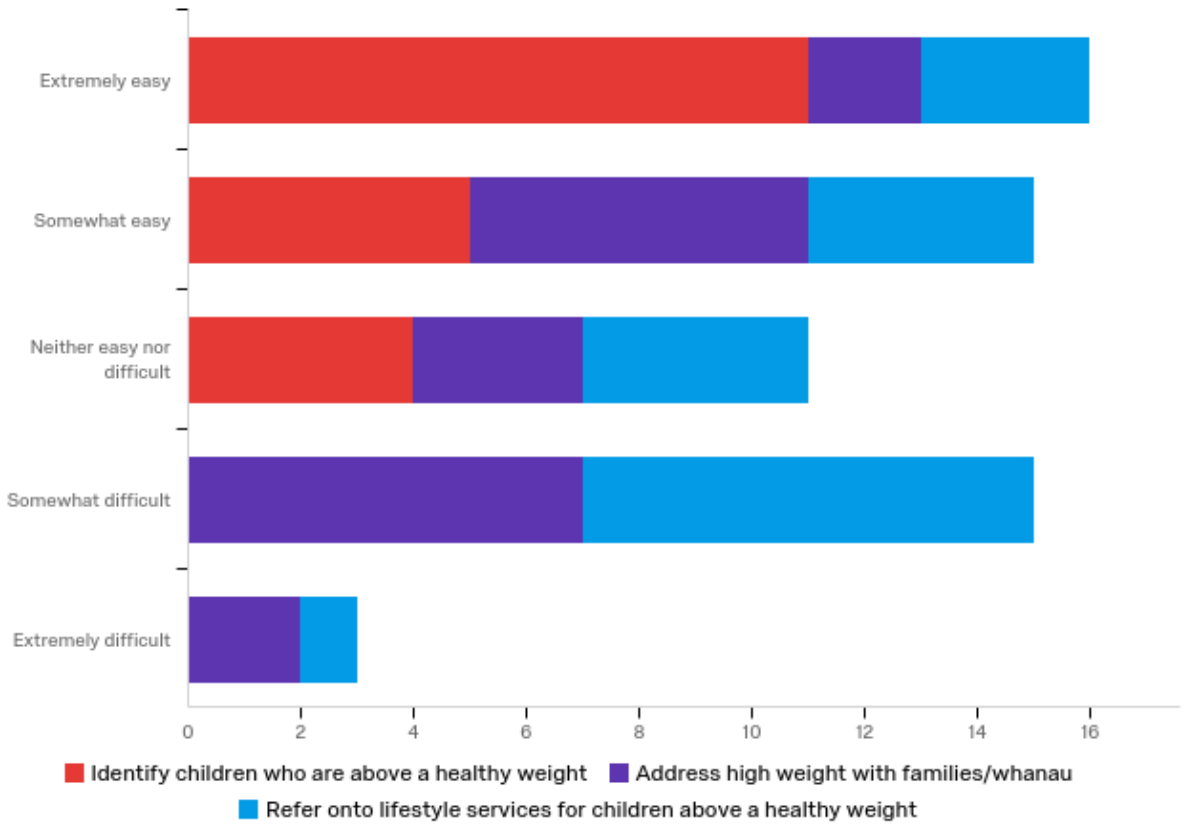


Figure 3: **Nurses' experience of identifying, addressing, and referring high weight children.**

Research Question: How do registered B4SC nurses perceive their competence to use MI effectively?

In the third section of the survey, the nurses were asked questions on their experience with MI. This included training, the type of training, when they trained in MI, whether the training was adequate, other counselling methods they may have been trained in, their confidence using MI, and experience in using MI. The findings are presented in Table 7.

Just over half (57.9%) of the nurses reported that they had confidence in using MI for discussing weight-related issues.

Yet most (73.7%) had received training in MI.

Training in MI varied. About a quarter (26.1%) had received a one or two-hour presentation, and the same percent had received a one-day workshop. Of those who had received training in MI, 80% received their training within the last three years. The level of MI training received was considered either extremely or somewhat adequate by 80% of the responders.

Approximately two-thirds (66.7%) agreed or strongly agreed in noticing a change in how they conduct sensitive conversations such as weight-related since using MI. Additionally, about three-quarters (76.5%) of the responders either strongly agree or agree that using MI is better than giving advice.

In terms of potential barriers to using MI, time was not viewed as a barrier by 60% of the nurses, and almost half (46%) considered that lack of training in MI did not impede their ability to use MI. The majority (84%) of the nurses had not had any training in any other behaviour change counselling method.

(Note: there was a reduced number of participants who completed this section. The number of responders totalled 19, however, some of the questions were only partially completed. This has been noted where applicable in Table 7)

Table 7: Nurses' Experience with MI

		Study sample	**%**
Total in survey		**20 (Female)**	
Total responders completed this section n=10-19			
Confidence using MI in weight-related conversations with parents/caregivers (n=19)		**19**	**100**
	Extremely confident	0	0
	Somewhat confident	11	57.9
	Neither confident nor unconfident	5	26.3
	Somewhat unconfident	1	5.3
	Extremely unconfident	0	0
	Not applicable as not trained in MI	2	10.5
		Mean confidence=3.6 (Neither confident nor unconfident), with a SD of 0.6	
Training in MI (n=19)	Yes	14	73.7
	Maybe	1	5.3
	No	4	21.1
Total completed training section *n=13-15*			
Duration of training n=13		**n=13**	
	1-2-hour presentation	6	26.1
	½ day workshop	1	4.4
	1-day workshop	6	26.1
Type of training n=10		**n=10**	
	British Medical Journal online learning	1	4.4
	Healthy conversations (MI a part of)	4	17.4
	ARA training programme	4	17.4
	Peer Support Group via Pegasus (information on MI)	1	4.4
The perceived adequacy of the MI training *(n=15)*		**n=15**	
	Extremely adequate	5	33.3
	Somewhat adequate	7	46.7
	Neither adequate nor inadequate	1	6.7
	Somewhat inadequate	2	13.3
	Extremely inadequate	0	0
When MI training was acquired *(n=15)*		**n=15**	
	0 – 6 months ago	8	53.3
	6 months – 3 years ago	4	26.7
	3 years – 6 years ago	2	13.3
	Over 6 years ago	1	6.7
Since using MI in my practice, I have noticed a change in how I discuss sensitive topics such as weight *(n=15)*		**n=15**	
	Strongly agree	3	20
	Somewhat agree	7	46.7
	Neither agree nor disagree	4	26.7
	Somewhat disagree	1	6.7
	Strongly disagree	0	0

I feel it is difficult to apply MI in my work as there is not sufficient time to do so (*n=15)*		**n=15**	
	Strongly agree	0	0
	Somewhat agree	5	33.3
	Neither agree nor disagree	1	6.7
	Somewhat disagree	3	20
	Strongly disagree	6	40
The next section includes responses from participants who had not completed information on training. The number increases from n=15 to n=17			
I feel it is difficult to apply MI in my work as I feel I have not had adequate training in MI *(n=17)*		**n=17**	
	Strongly agree	3	17.6
	Somewhat agree	3	17.6
	Neither agree nor disagree	3	17.6
	Somewhat disagree	5	29.4
	Strongly disagree	3	17.6
MI is better than giving advice *(n=17)*		**n=17**	
	Strongly agree	8	47.1
	Somewhat agree	5	29.4
	Neither agree nor disagree	3	17.7
	Somewhat disagree	0	0
	Strongly disagree	1	5.9
The next question has been completed by 19 of the total 20 in the survey			
Training in other behaviour change counselling methods *(n=19)*		**n=19**	
	Yes	3	15.8
	No	16	84.2

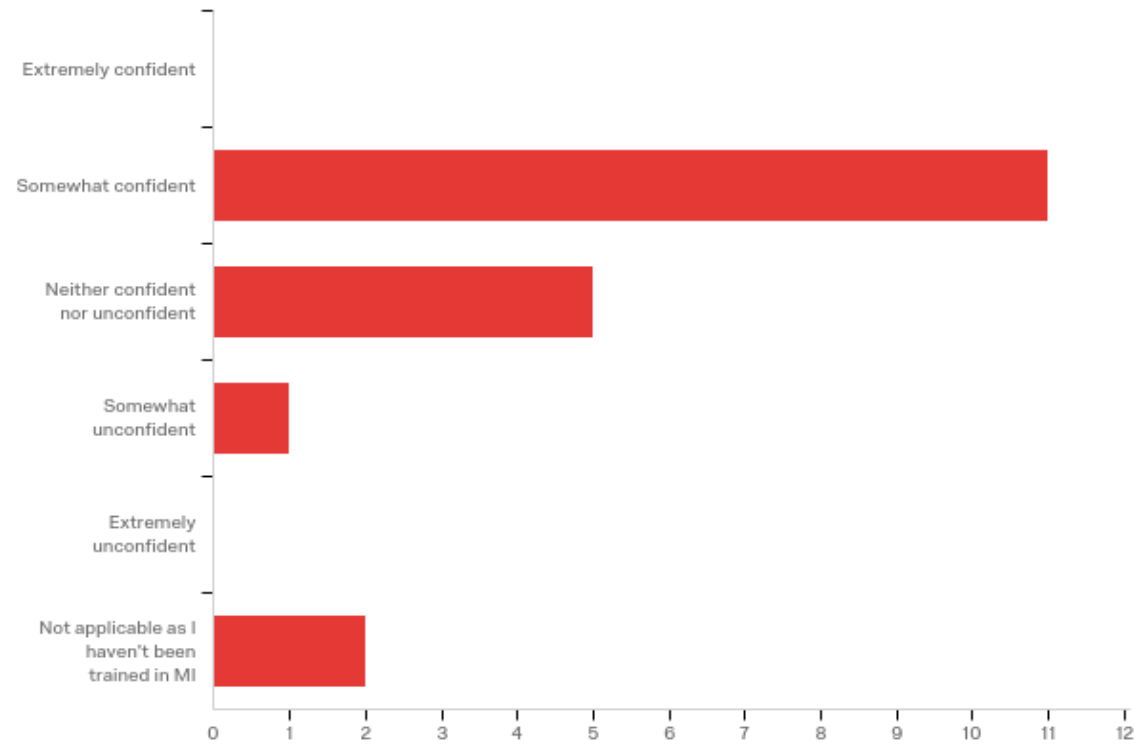


Figure 4: **Confidence in using MI**

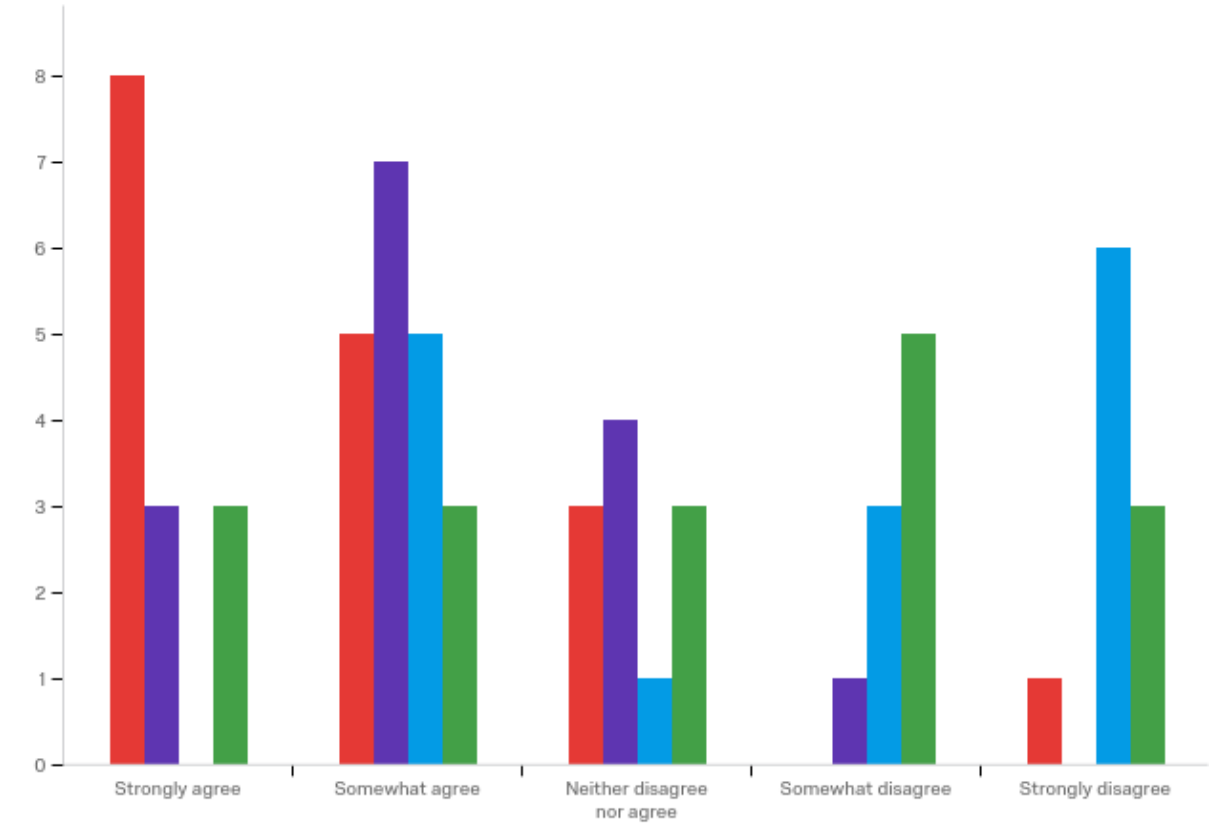


Figure 5: **Nurses' experience using MI**

I think using MI is better than giving advice

Since using MI in my practice, I have noticed a change in how I discuss sensitive topics such as weight

I feel it is difficult to apply MI in my work as there is not sufficient time to do so

I feel it is difficult to apply MI in my work as I feel I have not had adequate training in MI

Research Question: What are the nurses' attitudes to lifestyle programmes?

The next section of the on-line survey sought to understand the nurses' perspectives on lifestyle counselling. The participants were asked to reveal how strongly they agreed with statements relating to changing health behaviour. The Likert scale responses ranged from strongly agree, somewhat agree, neither agree nor disagree, somewhat disagree, and strongly disagree. The results are displayed in Table 8 and Figure 6.

Most of the nurses strongly agreed it was part of their role to motivate and support whānau in their lifestyle change (89%), and that providing information on weight-related risks was also part of their role (88%). However, just under half (44%) of the nurses disagreed that their task is to make sure parents/caregivers accept the referral onto lifestyle co-ordinators.

Less than half (44.1%) of the nurses agreed that they had been successful in supporting patients to make lifestyle changes. Most (83%) believed that patients can only make lifestyle changes when they are ready to and that readiness for change is the patient's responsibility. However, none of the nurses agree with using direct confrontation or persuasion to deal with resistant patients.

Table 8: Attitudes to Lifestyle Counselling

		Study sample	**Percent**
Total respondents = 18		**18**	**100**
My task is to motivate and support whānau in their lifestyle change			
	Strongly agree	12	66.7
	Somewhat agree	4	22.2
	Neither agree nor disagree	2	11.1
	Somewhat disagree	0	0
	Strongly disagree	0	0
My role is to provide information on weight-related risks			
	Strongly agree	8	44.4
	Somewhat agree	8	44.4
	Neither agree nor disagree	2	11.1
	Somewhat disagree	0	0
	Strongly disagree	0	0
Thinking about the B4SC referral process, my task is to make sure parents/caregivers accept the referral	Strongly agree	0	0
	Somewhat agree	5	27.8
	Neither agree nor disagree	5	27.8
	Somewhat disagree	2	11.1
	Strongly disagree	6	33.3
I have been successful in supporting many of my above a healthy weight patients to make lifestyle changes			

	Strongly agree Somewhat agree Neither agree nor disagree Somewhat disagree Strongly disagree	1 7 8 2 0	5.6 38.9 44.4 11.1 0
Readiness to make change is the patient's responsibility – no one can help them until they decide they are ready	Strongly agree Somewhat agree Neither agree nor disagree Somewhat disagree Strongly disagree	5 10 1 2 0	27.8 55.6 5.6 11.1 0
If whānau are resistant to talk about changing their weight-related lifestyle, direct confrontation and persuasion are required to help the person change	Strongly agree Somewhat agree Neither agree nor disagree Somewhat disagree Strongly disagree	0 0 0 7 11	0 0 0 38.9 61.1

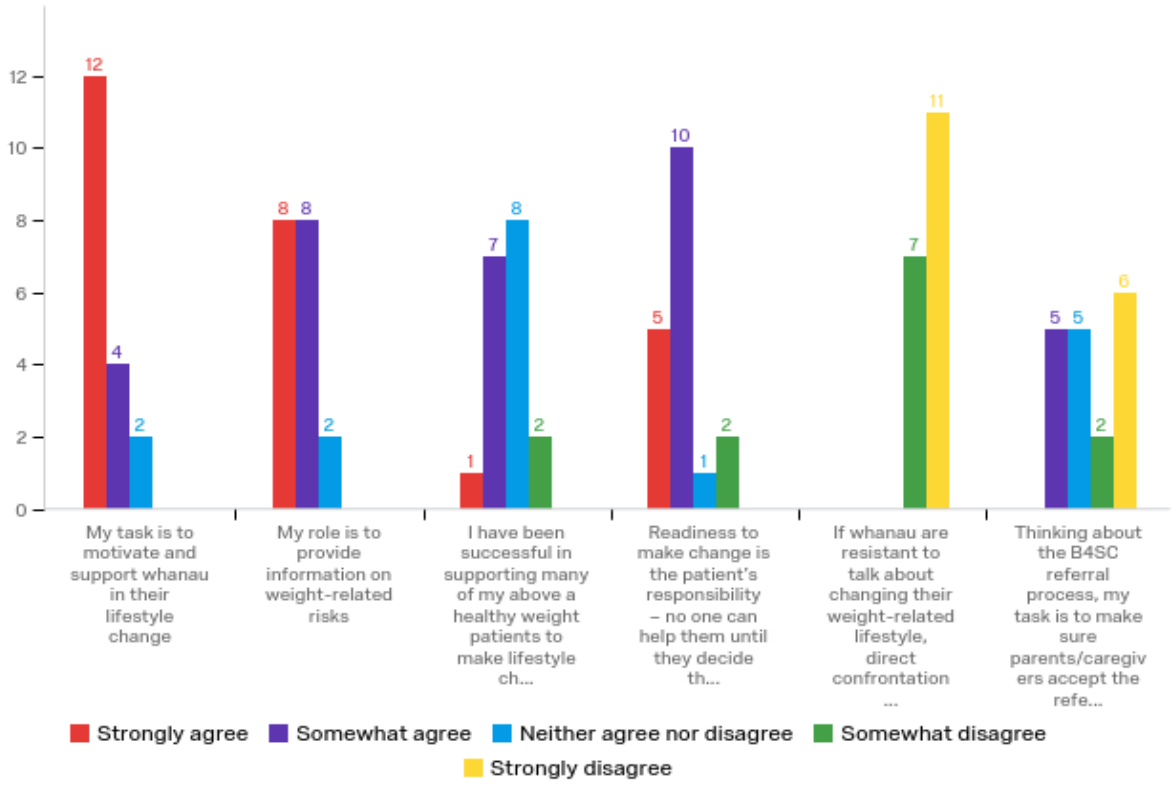


Figure 6: **Attitudes to Lifestyle Counselling**

Research Question: What are the barriers to having effective weight-related conversations?

Following on from attitudes to lifestyle counselling, the nurses were asked to respond to statements regarding the barriers to having effective weight-related conversations. The participants were asked to rate how strongly they agreed or disagreed to a series of potential barriers they may encounter during the B4SC consultation. The Likert scale responses ranged from strongly agree, somewhat agree, neither agree nor disagree, somewhat disagree, and strongly disagree. The results are displayed in Table 9.

Despite wanting to effectively communicate with patients who are above a healthy weight, most of the responders (67%) reported that "patient resistance" inhibited their ability to do so. Similarly, 67% agreed that parents/caregivers are unwilling to or do not believe their child has a weight issue.

All (95%) but one nurse disagreed with the statement, "I am reluctant to discuss weight issues with patients as I do not believe lifestyle interventions work". However, 50% agreed with feeling uneasy discussing weight-issues with parents/caregivers of high weight children.

There was an even split (44%) between the nurses who felt it was difficult to talk about weight-related issues and those who felt that it was not difficult with a patient they had just met. Similarly, there was a fairly even spread among the nurses who reported to, "I find discussing with patients how to change health behaviours hard work", with (28%) somewhat agreeing to this statement, neither agreeing nor disagreeing, and somewhat disagreeing. Almost three-quarters (72%) of the nurses did not consider that time pressures impacted upon their ability to have effective weight-related conversations.

Table 9: Perceived Barriers to Effective Weight-Related Communication

		Study sample	percent
Total respondents = 18		**18**	**100**
I want to be able to have effective conversations with patients who are above a healthy weight but often feel the patients are resistant to doing so	Strongly agree Somewhat agree Neither agree nor disagree Somewhat disagree Strongly disagree	5 7 4 2 0	27.8 38.9 22.2 11.1 0
I feel many of the parents of children who are above a healthy weight are unwilling to or do not believe their child has a weight issue	Strongly agree Somewhat agree Neither agree nor disagree Somewhat disagree Strongly disagree	5 7 1 5 0	27.8 38.9 5.6 27.8 0
I am reluctant to discuss weight issues with patients as I do not believe lifestyle interventions work	Strongly agree Somewhat agree Neither agree nor disagree Somewhat disagree Strongly disagree	0 0 1 3 14	0 0 5.6 16.7 77.8
I feel uneasy communicating about weight issues with whānau of above a healthy weight child	Strongly agree Somewhat agree Neither agree nor disagree Somewhat disagree Strongly disagree	1 8 3 3 3	5.6 44.4 16.7 16.7 16.7
I find it difficult to discuss weight-related issues with patients I have just met	Strongly agree Somewhat agree Neither agree nor disagree Somewhat disagree Strongly disagree	2 6 2 6 2	11.1 33.3 11.1 33.3 11.1
I find discussing with patients how to change health behaviours hard work	Strongly agree Somewhat agree Neither agree nor disagree Somewhat disagree Strongly disagree	1 5 5 5 2	5.6 27.8 27.8 27.8 11.1

Our current working schedule is too busy to allow for us to have meaningful weight-related conversations	Strongly agree Somewhat agree Neither agree nor disagree Somewhat disagree Strongly disagree	1 3 1 8 5	5.6 16.7 5.6 44.4 27.8

3.3 Interviews

Results

*Socio-demographic profile of Interview participants***.** Out of the 18 nurses who completed the entire survey, five (28%) agreed to participate in interviews and another three expressed an interest in doing so in addition to the original five who agreed. All of the interview participants were female practice nurses. The mean length of time as a B4SC nurse was 5.6 years, with a SD of 2.4 years. The key characteristics are included in Table 10.

Table 10: Socio-Demographic Characteristics of Interview Participants.

		Study sample	**%**	**Female**	**%**
Total		**8**		**8**	
Gender		**8**	100	8	100
General practice nurse		**8**	100	8	100
Time (years) as B4SC nurse	2-3 4-5 6-7 8-9	**2** **1** **2** **2**	25 12.5 25 25	2 1 2 2	25 12.5 25 25
Focus group		**4**	50	4	50
Indvidual face-to-face interview		**3**	37.5	3	37.5
Individual Telephone interview		**1**	12.5	1	12.5

3.4 Thematic Analysis

Coding. After reading and re-reading through the transcribed texts from the interviews (Appendix K), a total of 68 codes emerged from the data (Table 11). The codes were generated from the uttered responses to questions asked during the interviews. The codes were generated as a way of capturing the essence of the experience. These codes were re-read numerous times to check for overlaps and similarities. The text was read through again to make sure all possible codes were extracted.

Table 11: Codes and the Corresponding Themes Generated from the Codes

1. ***Characteristics of parents/caregivers.***

- Codes included (4)

Maori/Pacific Island
High weight/extreme high weight
Usually mum
Hard to reach/many life challenges

2. ***The pressures of referring.***

- Codes included (4)

Referrals are challenging
Systemic pressure to refer
GP referral less demanding and easier to refer to
Referral to dietitian preferable to LP
LP difficult to refer to

3. Barriers to achieving effective communication.

-Nurses' barriers

- Codes included (10)

Believe it is hard to talk to parents about child's weight
Not enough time/demanding role
Belief children will grow into their weight
Patient non-acceptance of health issue makes conversation harder/impossible
Own insecurities
Weight-related conversations are difficult/impossible
Ethnic/Language differences challenging
Public backlash/clinic complaints impacted on performance
Practical barriers – child in room/phone conversation
Discrepancies with weight charts

3. Barriers to achieving effective communication.

-Parental barriers

- Codes included (3)

Parents non-acceptance of the problem -Societal gender bias -Normalisation of BMI -Parents overly protective of the child
Practical conditions – time/money/transport
Lack of engagement with health providers

4. Facilitators for successful conversations (Nurses' characteristics)

- Codes included (1)

Experience/training provides confidence

Facilitators for successful conversations (Parental characteristics)

- Codes included (3)

Motivated parents easier to communicate with
Hard to reach most receptive to discussing
Discussion easier with less high weight (children)

5. ***Conversational strategies – Specific skills***

- Codes included (4)

Uses listening skills
Specific questioning skills used
Use of pauses during conversation to allow for solutions
Goal setting for parents

Conversational strategies – Providing information

- Codes included (4)

Providing information even though it does not always work
Preference for using educational resources
Reliance of visual tool to do the hard talking
Use of future health risk

Conversational strategies – Avoiding inducing shame or guilt

- Codes included (2)

Shame avoidance – uses sensitive language or re-describes issue
Takes holistic approach to health behaviour change

6. ***Nurses' commitment to patients***

- Codes included (6)

Building rapport/understanding
Provide support
Encourage parents to understand the health issue by educating them
Establishing/maintaining patient-provider relationship
Contributes to health behaviour change
Prioritisation of workload

7. ***Beliefs about children's weight problems and comments on their role in this***

- Codes included (5)

Believe child weight issues are important issues
Question why onus on nurses to enact change – other actions better

Including children into lifestyle changes/conversation important
Believe in their patients' (autonomous) potential for change
Belief children will grow into their weight

8. Motivational interviewing - Training

- Codes included (5)

Lack of time for training
Additional use of MI books and on-line videos
Workshop training in MI
Training inadequate
Training adequate

Motivational interviewing – Use of

- Codes included (8)

Alludes to using MI techniques
MI used selectively
Tries to use MI
Concerns over time it could take using MI
Difficulty learning new/reverts to habitual mode of communication
Benefits of MI realised
Believe practising MI would increase confidence.
Perceived level of confidence using MI

9. Need for training

- Codes included (3)

MI training: Face-to-face best
MI training needs to be tailored for B4SC – inclusion of children
Want to learn MI

10. Need for feedback and support

- Codes included (5)

Systemic support needed
Need for inspiring support – whole clinic using MI
Feedback on performance
Whole clinic using MI
General training around B4SC is needed and appreciated

In analysing the data there were some codes that occurred more frequently. Whether in response to the questions asked throughout the interviews or a triggered memory response. The following table (12) provides an example of the conversational excerpts that the codes reflect. This offers an account of the analytical process involved in the examination of the data.

Table 12: Individual and Group Interview Codes and Corresponding Data Extracts. The Codes Selected are the Main Codes that Recur Throughout the Interviews.

Referrals are challenging	Systemic pressure to refer	GP less demanding and easier to refer to	Parents non-accepting of the problem	Hard to reach or many life challenges
"…doing the referral is a little bit more difficult". *"…we refer them to like the next bit I hate is you've got to refer them to the GP"* "…the parents involved didn't want anything to do with me referring them" *"…well you can be referred here for this. And that's more time they're thinking about off work but it's all going over in their brain and they're going and I'm being told my child is overweight, myself I'm not coming back"*	*"…you know we do like to refer for that if possible"* *"…I would like to think that we can support your son by making a referral…"* *"Well these are our guidelines I'm here to help you support you…"* *"…we refer them to like the next bit I hate is you've got to refer them to the GP"* *"Well why are you referring them, you've just already had that conversation with them, so these are our guidelines"* *"…having an email back saying you know why haven't you referred well because I haven't and then well you really should…"*	*"I managed to successfully get them to refer to the GP usually, the healthy lifestyles programme is harder to get them to refer to".* *"…so I felt like probably the GP referral was sufficient enough for that one"* *"Fortunately a majority of them happen to be linked in the Whānau Ora so they have two workers there…so I've been able to do the referral to link in..."* (with Whānau Ora) *"…I then make the suggestion if whether they would be happy for the child to be reviewed in three months for a weight check you know growth check…"*	*"…I think a lot of parents think it's just, particularly boys, that it's just them they're just going to be like that and they're going to grow out of it and I think that's probably the main hurdle"* *"…even though it's plotted there right in front of them that most mothers don't like the idea that their child is above a healthy weight and so I don't often find a mother is concerned"* *"…quite often I hear like he's just a big boy, his dad's big, quite often I get the sense that they don't want to believe what I've told them"* *"What do you mean my child looks okay, do they look fat to you? sort of thing"*	*"…some of those kids in that range also have I find they've got deprivation stuff going on as well so then they've got referrals to the dental and referrals to vision and hearing and referrals for injections and the thought of having another referral to another agency coming in and you know a lot of them have, like she had Child Youth & Family involved, she also had Child Protection involved"* *"…Well I guess the time factor is quite a big one for people"* *"…transport, I mean for some of these kids especially the ones I do mobile, transport's a big issue, money…"*

Belief hard to talk to parents	Own insecurities	Shame avoidance – uses sensitive language or re-describes the issue	Establishing or maintaining patient-provider relationship	Reliance of visual tool to do the hard talking
"…none of the three conversations went that well and the parents involved didn't want anything to do with me referring them" *"…I think parents are more sensitive about their children than probably themselves"* *"You're attacking their parenting"* *A lot of the mums I see are obviously above a healthy weight too and I know I can feel that it's something they don't want to talk about* *in that situation I do find it quite difficult, yes* *Sometimes I feel like they might be taking it personally and they feel a bit offended* *they've not taken me seriously, don't want to listen, don't want to know, don't want to address it* *I must say having to talk to mums and dads and caregivers about their above a healthy weight child I still find quite daunting*	*"…our own personal experience with being overweight for me probably has some effect"* *"…you're feeling uncomfortable with the parents feeling uncomfortable"* *"Sometimes I also think if you're not overweight yourself some people can kind of think that they might have had experiences with people that aren't and it's sort of a judgement thing"* *"There's a skinny white girl, what do you know?"* *not being scared to ask that question,* *I don't know how to do it without offending them* *we've mentioned the healthy above the healthy range or you think oh have I done the right thing* *in my first couple I was really like how am I going to bring this up*	*"…be more aware about what words I use…"* *And that's taken a long time to get to that point without feeling like I'm offending anyone* *I'll use the word tubby but I don't mean that, but you know they're all short and they're all still got their baby fat around them and try to encourage them well that's your height might check in three months and see how he's going because he might have grown taller* *I always say to parents look it's not about the child losing any weight it's about them not gaining more before they grow any taller* *I'm not saying your child's overweight I'm saying your child's above a healthy weight* *I just try not to give that hostility back you know because I know it's often a sensitive issue* *yep I don't use nasty words or anything or call anyone fat* *… don't use obese all that often*	*"And it is far more important to maintain that relationship… that family's not going to see another practice nurse…"* *"…maintaining that relationship because they're going to come back to you with everything else, you're going to see them multiple times and you want them coming back not being offended and leaving the practice or going elsewhere"* *"…we're at the advantage that we probably met the children before…"* *"They get quite attached to you"* *the height and weight's fine but I think it's having that rapport and bringing them back* *I catch-up and oh how's things are going and things like that* *And you want them back you don't want to, I don't want to lose them, I want them back* *so you're sort of trying to create an environment*	*"…normally get them to just have a look at the, turn the computer around and let them have a look at where they've been tracking"* *"Oh well I just did the whole you know looking at the chart and showing where she was"* *"…parents are really focused on that chart aren't they and they say oh it's above weight"* *"…drawing up manually on a piece of paper and that and saying oh you're above the healthy range"* *"…put it on a poster and made it a visual thing… talk about having breakfast are you eating regular meals are you sleeping and all that…"* *"…put it on a poster and make it visual and then we've got a plastic plate with the different portion sizes…"* *they see the poster ideas and I give a little booklet*

Themes. Themes emerged during and after the coding process through a system of organising codes into groups according to commonalities. These categories were then re-read to better understand what the codes were saying. A theme is a label that briefly describes what each group of codes is communicating. These themes were checked against the codes and the data set to make certain the core elements of what the nurses reported experiencing during weight-related conversations were revealed. The total number of themes that developed from the coded data set was 10. The 10 themes varied in strength and occurrence, depending on the utterances of coded data. (The generation of themes and codes are included in Table 11).

The following is a description of the themes, with supporting quotes from the transcribed data. The order they are presented is based on importance, based on how frequently the theme was referenced across each conversation, with subsequent themes provided in order of relationship to preceding and corresponding themes.

Theme 1: The pressures of referring

This theme reflects the nurses' experience with the referral process after identification of a high weight child ($\geq 98^{th}$ BMI) has occurred. The B4SC nurses are required by the New Zealand Ministry of Health to refer 95% of the four-year old children that have been identified as above a healthy weight. All the participants indicated this systemic pressure to refer impacted on job performance and the choices made for referring.

A nurse discussed the repercussions she faced when she refused to refer:

"And I think the thing I was saying before having an email back saying you know why haven't you referred well because I haven't and then well you really should but I suppose if you're happy with your decision. Very aggressive. You can ring and

discuss it with me but I didn't ring and discuss it, I put parent declined. And yes I was happy with my decision".

There was an overall sense that referrals were challenging because referring whānau could evoke a negative interaction. Nonetheless, they referred the patients despite these difficulties:

"…Well you can be referred here for this. And that's more time they're thinking about off work but it's all going over in their brain and they're going and I'm being told my child is overweight, myself I'm not coming back".

"…And then we refer them to like the next bit I hate is you've got to refer them to the GP, so we refer them to the GP and she says well what am I going to do about it you know I don't mean in those sort of words but recalling them every three months for height and weight check and then I find some GPs say well why are you doing that. I said well it's part of our guidelines we've got to have this discussion, yes about diabetes, about heart problems and I've already asked that in the consult with the before schools. So, I don't know what other practices are like, but I find that really hard. Well why are you referring them, you've just already had that conversation with them, so these are our guidelines".

Nurses described responding to the pressure by explaining to the parents/caregivers that it is part of their role and because of the appointment, that a referral should occur:

"…You know we do like to refer for that, if possible".

In reaction to the pressure and the challenges associated with referrals, the nurses countered this by opting for what was perceived as a more acceptable referral pathway. They articulated that referring high weight children and their parents/caregivers back to the general practitioner (GP), was the more acceptable option for most whānau. All the participants

referenced their preferred option to refer to the GP as opposed to lifestyle programmes many times during the interviews. The lifestyle programmes were deemed too difficult to refer to or too demanding an option for the whānau. This preference was motivated by a strong opposition to lifestyle programmes from parents or even the nurses themselves:

> *"I managed to successfully get them to refer to the GP usually, the healthy lifestyles programme is harder to get them to refer to".*

> *"...Its parenting help and the Green Prescription and all that, some of them don't want that, they don't want a bar of it"*

> *"Appetite for Life normally it's seen as too much, I haven't actually done…* (a referral)*"*

Theme 2: Barriers to achieving effective communication

Parental barriers

This theme reflects the difficulties the nurses face when they attempted to address children's weight problems with whānau. There was a sense that parents were unreceptive to the information that their child had a high BMI, and the nurses found this extremely challenging and/or frustrating:

> *"...Even though it's plotted there right in front of them that most mothers don't like the idea that their child is above a healthy weight and so I don't often find a mother is concerned"*

> *"What do you mean my child looks okay, do they look fat to you? Sort of thing"*

> *"I think yeah the mother's response is, I've even had some mums laugh you know and that might be a nervous reaction or what have you but it's like they don't believe*

what I've just said and they don't want to address it, yes and like yeah I guess they've not taken me seriously, don't want to listen, don't want to know, don't want to address it".

Parents were reported to also misperceive the issue. Three of the nurses articulated occurrences where the parents were dismissive of the problem because their child was a boy. The misperception being a boy of high weight was acceptable:

"…I think a lot of parents think it's just, particularly boys, that it's just them they're just going to be like that and they're going to grow out of it and I think that's probably the main hurdle"

"…He's always been on that percentile he's healthy we eat a really balanced diet he's really active I'm not giving my child you know a complex".

There were also accounts of parents normalising their child's high BMI. This was evident in occasions when the child had been born on a higher BMI percentile, and had maintained this weight through childhood. The argument was that because the child was born at a higher BMI, the high weight was not an issue – it was normal for that child. In response to this, the nurses would refrain from referring the children or would discuss maintenance of the child's weight in the hope that they would grow into it, as reflected here:

"Yes, all three of them were born there (≥98th BMI) *they were tracking nicely up there really healthy happy active children with great diets. And yes, all of them expressed concern about being referred".*

The nurse when questioned about whether she had referred these children, said she had not because she would prefer the family returned to the clinic: *"Yes rather than pushing them away".*

Other conditions impacted on how some parents engaged with health services. The nurses commented on life issues that could inhibit the parents accessing healthcare and therefore referring the family onto lifestyle programmes was considered too demanding. The nurses faced a conundrum whereby whānau that were high needs, (presenting with children with high BMI), had so much else going on the nurses were reluctant to add to this pressure, and yet the nurses were required to refer these children for weight treatment. This nurse illustrated this succinctly:

> *"I had one the other day that she would have been open to the healthy lifestyles, but she had so many other things going on that she just didn't feel like she had time. Like her child, some of those kids in that range also have I find they've got deprivation stuff going on as well so then they've got referrals to the dental and referrals to vision and hearing and referrals for injections and the thought of having another referral to another agency coming in and you know a lot of them have, like she had Child Youth & Family involved, she also had Child Protection involved. So, she's got so much contact with other agencies that another agency coming in was just too much for her to cope with".*

Other practical conditions related to whānau not having the time, money or transport to attend lifestyle programmes, and the nurses were unwilling to add to those pressures. There was genuine concern for the overall welfare of whānau involved:

> *"The other thing is the parent making the appointment to see you has to take time off work that's the first and they bring that child in they have to spend all that time at the before school check and then to let them know that well you can be referred here for this. And that's more time they're thinking about off work but it's all going over in*

their brain and they're going I'm being told my child is overweight? Myself I'm not coming back".

"…transport, I mean for some of these kids especially the ones I do mobile, transport's a big issue, money…"

Nurses' barriers

This theme reflects the internal barriers the nurses struggled with that impacted on their ability to conduct these conversations. One of the biggest barriers to communicating effectively with parents was the nurses' belief it was harder to discuss child weight-related issues with parents. Informing a parent that their child was of a high BMI was considered a highly challenging task. Almost all the interviewees commented on the complexities of this type of conversation:

"Sometimes I feel like they might be taking it personally and they feel a bit offended… I must say having to talk to mums and dads and caregivers about their above a healthy weight child I still find quite daunting"

"…it can be a bit of an awkward thing for some people because everyone thinks their kid's wonderful and wants them to be in that normal kind of range…I think parents are more sensitive about their children than probably themselves".

Their concern was with stigmatising the parents: *"You're attacking their parenting",* which affected their confidence to conduct an effective weight-related dialogue. This contributed to a belief that these conversations were difficult or impossible to conduct:

"*What do you mean my child looks okay, do they look fat to you? sort of thing. And I've had to work hard how do I word this without offending parents if that makes sense… Yes, and not being scared to ask that question, yes".* (Regarding referring the family).

"Even if you're really careful about how you word it you know for their height you know their weight is just a little you know. They still know what you're saying".

"That's a very sensitive topic for practice nurses to have with anybody. So even you know talking to them about Green Prescription or about changing the diet or their dietary needs or anything like that you know it is a very sensitive topic, I don't know if nurses in general are very well equipped to have these conversations with patients".

What further added to the perception that these discussions were difficult, was the fear of negative feedback from parents/caregivers. The nurses were aware of complaints from disgruntled parents and were cognizant of negative public opinion expressed on on-line forums. This heightened a belief that these conversations were not only difficult but there was a high risk for negative ramifications from a failed exchange:

"…But I do have apprehension about talking about weight because I know of circumstances where people have complained, or they get quite sensitive and the whole family's big".

"…There's been a lot in the media about a practice nurse said my child was overweight and very similar to what you say. He's always been on the higher percentile for his weight and the practice nurse said he was fat and ra ra ra and there's been a lot, I think I've seen one nice article on Stuff".

Furthermore, the nurses' own insecurities about weight would on occasion affect how they viewed their ability to conduct weight discussions. A personal experience with negative attitudes towards high weight shaped one nurse's judgement on how the issue should be treated:

"*…And I think too our own personal experience with being overweight for me probably has some effect. If you've had your own mother telling you, you're*

overweight then you don't really want to be that person telling somebody else's child that they're overweight. I think that probably affects the way that I find".

In contrast, another nurse was concerned for patients taking her seriously due to being slim built. The feeling was, whānau may judge the nurse based on her body size and this would affect the parent's responsiveness during the conversation:

"So sometimes yeah it's a little bit like how they can relate to the person what's whatever yes so they might, sometimes I mean I am lucky I can eat a lot of food but it's interesting a lot of people just assume that you know they just make assumptions oh you must eat really well otherwise people go oh must be able to eat whatever you want. There's a skinny white girl, what do you know?"

Normalising a child's weight was not only a barrier for the parents, but some of the nurses viewed a child's high BMI similarly. On these occasions the nurse would decide that because the child had always tracked at the higher BMI, it was *"normal"* and referrals beyond the clinic were unnecessary:

"But when I'm doing the weights it might actually be normal for that child and they might grow into it… and try to encourage them well that's your height might check in three months and see how he's going because he might have grown taller".

"Yes, all three of them were born there they were tracking nicely up there really healthy happy active children with great diets. And yes, all of them expressed concern about being referred." (When questioned on what happened in these instances, the nurse replied that whānau were not referred beyond the clinic).

The barriers to effective communication also included practical conditions. The most notable reference across the interviews, was the discrepancies with the weight/BMI charts the nurses used. The official B4SC charts are based on "those developed for the United Kingdom

and the World Health Organization growth standards, the charts depict a healthy pattern of growth that is desirable for all children, whether breastfed or formula fed, and of whatever ethnic origin." (Ministry of Health Growth Charts, 2015, and WHO, 2018) (see Appendix J). The printed charts they used were either from the Well Child booklet or from the WHO website (both based on the UK-WHO growth standards used for B4SC). These charts they chose to use manually to measure height and/or weight for children ranging in age from two to five years. These charts do not include the same measure for calculating BMI as the official BMI calculator does, the weight chart provides a BMI guide that is inaccurate without completing the necessary height/weight calculations. The issue for nurses was they would complete the manual height/weight charts in front of whānau and relied on the BMI guide on the weight chart to alert whether the child had a weight problem. The nurses would complete BMI calculation after whānau had concluded their appointments. The decision to do this was based on convenience, as the official BMI chart took a lot of extra time to enter data, time they believed they could not afford. Three of the interviewees reported issues when using the different weight charts:

> "*But there's another difficulty with that because you have that other chart in front of you and you're doing it in front of them the child and the mum or dad and then it comes up at 75% and then you go onto the computer and it's 91(%) and you go oh my god".*
>
> *"Yes, they're different graphs, the one that we use on the computer and the one on the before school check. I mean in the Plunket book it's different than the computer".*
>
> *"…what I find with the before school check I must admit I get onto the computer system and see if they're in the right BMI because sometimes children have left".*

This left uncertainty about the accuracy of the B4SC charts used. Further, sometimes based on the nurse's judgement the child was not considered to have a weight problem, yet the BMI chart stated otherwise:

> *"So, when I'm loading on the height and weight under the before school check and it says show percentiles and I press that button and it says 98% and I think oh are they? And then you know because it's a laborious thing to load in they've already gone".*

> *"It's the chart, the charts that we were given by the before school check people, they're manual charts where you do the month to the height and weight and then it comes up with the BMI as well and then you measure that based on that height and weight and it's different to the one in the computer. The one in the computer makes it higher. I think that's a huge problem with it."*

One way to avoid this issue arising was by the nurse using the BMI chart from the outset despite the extra time it took. However, there remained a belief that the charts were not an entirely accurate method to determine if there was a weight issue.

Practical limitations were also considered barriers to effective communication. With an already sensitive conversation, adding additional factors compounded the sense of this being a difficult task to perform.

The complexities involved with addressing high BMI with different cultures was mentioned:

> *"Yep and I've had a lot of ethnic cultures that I find quite hard. Mainly Pacific and Samoan and the Māori group and their weight might be a little above average and you've got Filipinos coming in or other cultures and they're above their healthy weight or Asians and so it's trying to put that all in there the culture plus their lifestyle and all that".*

"we get a lot of the practice that I'm part of we get a lot of Indian and different Asian ethnicities and so a lot of them are quite small anyway, so they're not sort of the bigger New Zealand children, they're tiny anyway. (They need a different measurement? -researcher question*). Yes, yes, they do, yep".*

"And I think that, that's a barrier is the person who's sitting in front of you, you know like if someone's from a different ethnicity or different community it's that whole you know that can be kind of a barrier, yes".

The challenge of trying to convey the seriousness of the issue when comprehension was compromised due to language differences:

"Language barrier. So, one incident a mother had her teenage boy and I had no idea she couldn't speak English and he was translating so I had to be really really careful…"

Having to phone parents back after the consultation or the child in the room impacted on the confidence of some nurses:

"so, you know you're feeling uncomfortable with the parents feeling uncomfortable, the child's probably listening and thinking you know whatever they're thinking"

"Well I do that before they go because I don't want to ring them back and say actually it's in this range"

To a lesser extent the demands of the role and time constraints were commented on;

"I think it's something that's going to practice especially with us because we don't have a lot of time".

"Because we need to know so much about so many things".

Theme 3: Facilitators for successful conversations

Nurses' characteristics

Despite the reported barriers to conducting these conversations, being a nurse was seen to afford the ability to discuss children's weight problems. A belief that the role of nurse and training/knowledge provided confidence:

> *"I feel comfortable addressing it because I feel like I have the ability because I'm a health professional, I think that's what makes you feel comfortable because I guess, I feel like I've got the knowledge and so I don't really yeah I don't usually feel uncomfortable in those situations because I feel like they're looking to you for advice anyway… I think it's about having knowledge because then you feel confident in what you're saying but also being able to listen to what comes out".*

Parental characteristics.

When parents were perceived as motivated they were considered to be more receptive to the conversations. This led to the nurses feeling a greater level of confidence to discuss weight with whānau. These conversations seemed easier to manage:

> *"And a lot of families have come in and said oh what food should we be giving them so they see the poster ideas and I give a little booklet and say tell me a bit about what do you buy, have you got a vege garden you know just prompt a bit more and to see what's happening in the family and stuff like that".*

> *"And I said well we need to look at helping him to lose weight, we need to be looking at what you're eating, and she goes oh. She said it's not really good and it was awesome oh I actually need to lose weight we don't eat really well".*

"I look at the size of the child and then they go oh yes, yes and it's interesting they tend to revert back to themselves and say I want to lose weight".

Parents of less high weight children were also considered open to discussing weight and referrals. The impression was that whānau were more accepting of the problem if their child had a slight weight issue rather than presenting with a high BMI:

"If the child isn't, you know if they're just above the 91st BMI percentile I have found most mothers are willing to do that three-monthly follow-up to check the growth

("You mentioned before that those that are just above the 91st they seem to be more receptive to what you're saying than perhaps the*…"* researcher's question*) "Yes, yes. I have found that. I'm not really sure why but yes".*

Whilst some patients were responsive to the weight conversation, this receptiveness did not always translate to a referral:

"So, I have recently actually the hard to reach ones I've had quite a few and they're mainly the Māori Pacific Island kids and yes, the parents are usually in the overweight range as well from what I've observed, they're not all Māori or Pasifika but that would be the stand out group. They are usually quite open I've found to discussing it but actually having doing the referral is a little bit more difficult"

Theme 4: Conversational strategies

Specific skills

Once a child had been identified as having a high BMI, the nurses were required to communicate this with the parents/caregivers. They used a variety of techniques to either engage, motivate, or direct parents into accepting the referral.

Questioning was a skill referenced to by all the nurses interviewed. The use of questions opened the dialogue with the parents. By asking the parent's their views, it was a way to understand the parental perspective:

"*Now I've just you know graphing your child's weight and I see that they're in the overweight range I say does that surprise you at all?"*

"I usually say to the mum how do you feel about that?".

Additionally, asking questions about the family's lifestyle potentially enabled the parents to come to their own conclusions about lifestyle changes or for the nurses to garner a better understanding of whānau daily lives:

"And I've learned to ask questions about oh tell me a bit about your family life".

The questions began as a foundation to then discuss specific lifestyle choices that may have contributed to the child's weight, as one nurse referenced:

"Look I'm here to help you what is one thing we can change?"

The nurses acknowledged the importance of the parents having the time to reflect and to contribute to the weight-related conversation. By pausing during the conversation, the parents were provided the time to understand the implications of the information they had just been presented with:

"And then you kind of give them a bit of time to sort of talk about it".

The use of pauses was also used to allow the space for parents to provide their own solutions:

"And just giving them a bit of time to think about stuff that they can do without saying right here's this form you need to look at this and this is what we can change".

However, the nurses preferred to set goals for the parents. Most of the nurses articulated a variety of ways they would inform whānau of the changes they should make, as illustrated by these nurses:

> *"What we need to do is make sure that he grows into that weight. I said it's making sure he eats the healthy food but also more activity and more healthier foods and she was really really good"*

> *"Looking at a few goals where we might be able to make a few tweaks to improve this child's health like maybe limiting the screen time you know or another thing that came up with another child was eating as much as the parents, so looking at reducing the portion size".*

There was a sense goal-setting for patients was a familiar practice, even alluding to parents expecting this: *"because I feel like they're looking to you for advice anyway".* However, goal-setting was not always thrust upon whānau, there were occasions that permission was sought for selecting goals:

> "*…Well if they're identified through talking then I might suggest to them well you know it's recommended that this would be a good place to start, like reducing the portion size and is that okay with you and I write it down"*

> *"Look I'm here to help you what is one thing we can change?".*

Providing Information.

Providing health-related information was a similar strategy utilised to either educate whānau or to encourage (motivate) them to make lifestyle changes. There was a belief across the interviews that providing knowledge on what contributes to high weight would urge parents to act:

"I always say to parents look it's not about the child losing any weight it's about them not gaining more before they grow any taller and going over those things that might be contributing to them being above a healthy weight…".

Yet it was also acknowledged that providing information does not always work, nevertheless they still resorted to providing information:

"if it's, you're giving suggestions and there's nothing that they're going to be interested in then there's just no point…"

"I hear that for a lot of our patients if you give lots of information it just goes in one ear and out the other…".

A tactic all of the nurses used was a reliance on visual tools to do the hard talking – using other devices to convey to parents their child had a weight problem. They relied on visual tools such as graphs and diagrams to relate this information because this was considered the best way they could do so without personally offending whānau:

"But I always show them my graph and it is written, obese is written there so I think they have the idea about that".

(The session) "always starts with showing the mother where their child is on the growth chart and the mother can see that her child's above the healthy weight".

Imparting such information in this method also allowed for the parents to come to their own conclusions without someone directly telling them their child had a weight problem:

"…Parents are really focused on that chart aren't they and they say oh it's above weight".

Visual aids were also used to educate parents on how to change weight inducing behaviours. Beyond identifying a child as having high BMI, some of the nurses believed it to be their role was to assist parents into changing certain lifestyle behaviours that contributed to their child's high weight. One participant transformed the clinical environment into an educational setting. The room was set up with educational posters to immerse patients into thinking about the weight issue, along with information provision on how to change health behaviours. This nurse also created a plate with portion sizes to demonstrate how to eat to reduce weight and would include the children in the exercise as well:

> "*I do a lot of posters like a lunchbox poster and I give them out to the parents and we've got a poster with snack ideas, breakfast ideas, and do visuals, yes…put it on a poster and made it a visual thing… talk about having breakfast are you eating regular meals are you sleeping and all that…put it on a poster and make it visual and then we've got a plastic plate with the different portion sizes…"*

The impression was that by supplying educational material in a highly visible manner it would inspire the parents into action and teach them how to go about changing, without needing to counsel them.

Another participant used an available resource BeSmarter, a step-by-step tool designed to help parents change weight inducing behaviours:

> *"(BeSmarter) it's got all the information there and so it highlights some areas where mum might not have thought about that might be affecting their child's weight, like too much screen time or the portion size of the food".*

The nurse used this resource to engage the parents into thinking about their lifestyles choices.

The long-term risks associated with children above a healthy weight was also communicated to parents. Rather than focus on the severity of high weight during infancy, alerting parents to the possible future ramifications of high BMI was used to ignite a desire to modify current behaviours. For example:

> "*If a child was to remain above a healthy weight as they get older that they might end up having certain health problems, so this is why we do this now".*

And as vividly described by this nurse:

> "*At the moment he's quite young but for a lot of our adults in today's society we're looking at teenagers and they're having problems with diabetes and having problems learning and have had problems with their eating habits".*

Avoiding inducing guilt or shame

Avoiding inducing guilt or shame was a common theme. The participants demonstrated an acute awareness of how inducing guilt or shame could negatively impact on the relationship with their patients:

> *"I do have apprehension about talking about weight because I know of circumstances where people have complained, or they get quite sensitive and the whole family's big".*

> *"That importance is maintaining that relationship because they're going to come back to you with everything else, you're going to see them multiple times and you want them coming back not being offended and leaving the practice or going elsewhere".*

There was a sense of caution expressed when identifying someone's child as having a weight issue as it could be perceived to be an attack on their parenting. This was evocatively described by one participant:

> "*I think you don't want to attack them and you don't want to make it seem like they're doing a bad thing, or they've done a bad thing".*

To avoid causing this parental guilt, all the nurses would use sensitive language, as illustrated here:

> "*…Overweight range is quite good. So, I just try to be a little bit soft about it I'm not saying your child's overweight I'm saying your child's above a healthy weight".*

The other method used to avoid evoking guilt or shame was to re-describe the issue by implying the child was carrying baby fat rather than any parental cause for the high BMI:

> "*I'll use the word tubby, but I don't mean that, but you know they're all short and might check in three months and see how he's going because he might have grown taller".*

However, at times it seemed that it was completely unavoidable to evoke shame:

> *"And I don't know even if you said it in the best way you would still you know because I just think it's a sensitive topic so regardless of how well you might say it. Might dress it up it's still, you're still saying someone's child weighs too much. So, they'll take it personally regardless of how it's brought up".*

Theme 5: Nurses' commitment to patients

A key driver of the nurses' hesitancy in discussing children's weight issues, was their need to establish and maintain the patient-provider relationship:

"And it is far more important to maintain that relationship… that family's not going to see another practice nurse…"

This relationship was viewed by some of the participants as more important than communicating child weight-related information:

"…maintaining that relationship because they're going to come back to you with everything else, you're going to see them multiple times and you want them coming back not being offended and leaving the practice or going elsewhere".

There was an impression that finding the balance between relaying highly sensitive information whilst sustaining the patient-provider relationship, was something some nurses were still grappling with.

Empathy was considered important for the patient-provider relationship:

"…They're working long hours and they might be eating on the run or the kids are at preschool or childcare and they have their main meal at lunch and then they get home and they might not eat until later on in the day"

They also expressed caring about patient health outcomes:

"And that's extremely frustrating as a nurse because you want to help, you want to try and change the outcomes for our patients."

Belief in patients' ability to modify health behaviour was referenced by the same two nurses who included children in their conversations. They had a strong sense of their patients' potential for change and the autonomous nature of that change:

"*You have to have that conversation and it's up to them to whether they choose to do it".*

"I think sometimes they just need to process a little bit and a lot of people I'm sure do make changes after we go anyway".

There was also a sense that the B4SC which is a health and development check covering a range of possible health, developmental, social and behavioural are demanding for nurses:

"I know the before school checks have changed over the last few years, got a lot to cram in there".

And there was a sense of wanting to prioritise the time, including recognition of the time parents have taken to attend the appointment, to address other important issues:

"Before school check is such a small of what we actually do on a general basis".

Theme 6: Nurses' beliefs about the child weight problem and comments on their role in this.

Whilst there was a genuine concern for patient wellbeing and a commitment to supporting their patients, the nurses expressed a belief that there was too much onus on the nurses to address children's weight problems:

"*We know it's worthwhile, we want our children to be healthy".*

"How I think it should run there should be a big overall community thing with physical activity…"

The pressure to communicate with parents on their child's high weight, with the added responsibility to refer, was questioned:

"I can see you know the overall aim is a good aim we want to have healthy happy active children and families. But I'm not sure that we're doing a service".

For some of the nurses, involvement of children in the solution was deemed necessary for the conversation to be beneficial:

"*I guess it's the parents that we're targeting but also you've got to listen to the kids as well".*

"*Yes, and their kids they know what they're interested in".*

The impression was because the conversation was about the child's weight, including children in the discussion was a given.

Theme 7: Characteristics of parents/caregivers.

The most common parental characteristics the nurses commented on was that the parents were also of high weight:

"The parents are usually in the overweight range as well from what I've observed"

"The girl that I referred if they are actually overweight then often the parents are too".

Furthermore, the parent most commonly mentioned was the mother: *"It's usually mums I'm talking to",* and this was referenced in many of the recounts of the conversations.

The social deprivation that many whānau faced was often mentioned. The high needs of whānau impacted on their health and access to healthcare:

"*Some of those kids in that range also have I find they've got deprivation stuff going on as well."*

"They're very high needs, they're all well overdue for their four-year old and they're always so busy the mothers have always got stacks of children with them".

The ethnicities mentioned most were Maori and Pasifika:

> *"Yep and I've had a lot of ethnic cultures that I find quite hard. Mainly Pacific and Samoan and the Māori group"*

> *"I have recently actually the hard to reach ones I've had quite a few and they're mainly the Māori Pacific Island kids and yes the parents are usually in the overweight range as well from what I've observed"*

Theme 8: Use of motivational interviewing

MI is a collaborative, client-centred form of guided intervention, which evidence demonstrates can build and reinforce motivation for behaviour change. Despite the Ministry of Health recommending the use of MI for this context (Ministry of Health, 2015b), the nurses reported low use of MI. When it was alluded to being used, specific skills applied were asking permission to provide information, reflecting what the patient said, and open-ended questions.

> *"So, the technique that I use is often when I'm providing information is asking permission to provide information",* and, *"but I mean I'll sometimes ask people what they think about something you know".*

The nurses who reported using MI in their work, described using MI selectively. The impression from this nurse was MI would only be effective at certain times:

> *"It is quite complex, and I think even then the situations where you know you can use it influence a few things and it's not going to work it's not required or not that urgent, but yes"*

Moreover, and contrary to the evidence about MI, the situations when MI was described as being used were when patients were already willing or motivated:

"*I do notice a difference using them* (MI techniques) *particularly I find it's more effective if I know that they're interested that I've got them clued on otherwise it is hard".*

Other nurses remarked on the perceived benefits of using MI and expressed the desire to be able to use it effectively:

"*I definitely can see the benefit and I'd like it to be used more but I feel I need more training definitely".*

The overall sense was MI was not a familiar method, the nurses were not confident to use it in difficult conversations.

"But it's very much a practiced skill when we're busy and got so many things going on we tend to just revert back"

"I guess it's still becoming a natural part of it sometimes I still struggle a little bit…"

"I still feel like an absolute beginner".

Learning a new method of communication requires a concerted shift in thinking and repeated practice. The nurses described a pattern that when pressed for time it was easier to revert back to habitual communication methods.

"And I do slip back to the normal way I've practiced for years as a nurse"

"I've got the flowcharts on my wall but it's very much a practiced skill when we're busy and got so many things going on we tend to just revert back to the normal language I guess and the normal style".

Motivational Interviewing Training

There was a mixed response in terms of the training they received, from high praise to disappointment:

"It was quite good actually, quite interesting it was about a six-hour course or something",

"Then I went along to the training and I mean it was okay but still don't think it was enough you know. No, it wasn't enough".

"I'd like to get better, but I don't think the course I just did helped me very much"

Nurses who had positive statements regarding the training described using specific MI skills. It is uncertain whether they received more training than the other nurses or if they responded differently to the training offered.

The nurses when describing using MI in their work were both positive about the training and had a relatively high degree of confidence communicating in this setting. The confidence to communicate derived from a good sense of self-efficacy, shaped by their role, rather than training in MI:

"I think it's about having knowledge because then you feel confident in what you're saying but also being able to listen to what comes out".

These nurses also reported becoming more confident using MI with repeated use and both a willingness and confidence to try MI despite not being competent in it:

"*I guess it's still becoming a natural part of it sometimes I still struggle a little bit but what I'm finding is the more I use it* (MI) *the easier it is and actually starts to become just second-hand"*

Typically, the training the participants received was over one day, with no mention of on-going supervision or feedback. To remedy this some of the nurses sought to supplement the workshop training with books and on-line video:

> *"Every now and then I'll pick up the book and I'll read it and I'll put it down and it's like those you see you pick up something new and oh you see it from a different angle"*

> *"And by myself I've gone onto You Tube and watched the Motivational Interviewing and some of them make it look so easy and you just think wow you know why can't I do that, I'd love to be able to do that you know".*

Time and an overload of professional development was mentioned as a barrier to training:

> "*There was some training that Pegasus did, but I think it was on a Wednesday when I was working during the day. So, with practice nursing it's really hard to get time off when you're at work, also there's just so much education going on like you could do forty hours in a year quite easily".*

Overall, the nurses in this research expressed a need for further MI training and ongoing support to feel more confident discussing weight with their patients.

> "*I guess it's still becoming a natural part of it sometimes I still struggle a little bit but what I'm finding is the more I use it* (MI) *the easier it is and actually starts to become just second-hand"*

> *"I've got the flowcharts on my wall but it's very much a practiced skill".*

Theme 9: Need for training

Training in MI or training associated with weight-related conversations was something all the participants wanted:

"Oh no I need to go, I need to go - I've been there in Nelson - you know if they could just run some more how do you have the healthy weight conversations, how do you have the, because they don't want us to talk about family violence until we've done the training and I haven't done training".

Furthermore, some nurses commented on the need for the training to be targeted for the B4SC. The sense was that the workshops were generalised towards adult health issues and the sessions would have been better served if they included how to interact with children:

"*Well they targeted it at the before school check nurses but I did find it interesting that there wasn't a lot of specific to the before school check stuff, so it was just about motivational interviewing and we're all before school check nurses but when I asked, I said oh you know so how are we going to relate this to four year olds and she was like oh we're not talking about four year olds and I was like mm you know I thought it was a bit odd and I think thinking back on it I was like well I guess it's the parents that we're targeting but also you've got to listen to the kids as well and I thought if they were targeting before school check nurses then possibly there should have been some information relating to four year olds you know because it's important they need to, they're not idiots at four".*

There was also a preference for the training to be face-to-face rather than virtual, to facilitate greater understanding:

"*No, I think we definitely needed more role play, I think we needed the facilitators to actually show us how they do it, how they use it in front of us".*

Theme 10: Need for feedback and support

Feedback was also an important component of the training that was seen to be missing:

"And I kind of lost interest because of the course run through Pegasus I just felt like you know unless you're really supported and getting good feedback I don't know how well I'm doing".

The participants detailed what they believed was required for MI training to be effective and feedback was a specified need. This nurse succinctly described the importance of receiving video feedback:

"…(If) *you get really good feedback and you can see yourself you know. And I know everybody probably finds that very daunting myself included but at least you can see how you are perceived by your patients and you'd be able to learn from that".*

Feedback from parents was also suggested as an alternative way to gauge how successfully they interacted with whānau during the B4SC session:

"I don't know whether it would be beneficial to get feedback from some of the parents that you actually deal with".

"(If) *you get really good feedback - you can see how you are perceived by your patients and you'd be able to learn from that"*

The deterioration of MI skills acquired because feedback/supervision was not offered was described:

"*…Maybe it was more exercise and with my colleague it was trying to use the motivational skills to try and get the person to come up with their own solutions and so we put a marble up for reflections and something else there* ***I've forgotten what it was****, but basically that was meant to be a way of seeing whether you were using motivational interviewing skills correctly or not. But it was a little bit confusing and*

so we only ever got to do that twice for two separate meetings. And yes, I didn't find it that helpful".

Beyond training and feedback, the need for clinic wide use of MI was identified. The implication was that individually there was less incentive to utilise MI but with clinic wide use, potentially, it could increase the retention and usage of MI skills:

"I want to know the other people the doctors and the other nurses I work with are going to be using it too, like I can't just be the only one who's going to start this new trend, but I definitely can see the benefit".

3.5 Summary

The results of the survey revealed a complex mixture of responses regarding the nurses' experience discussing weight with whānau. There were some discrepancies involved in the level of confidence and ease discussing children's weight problems and in the use of MI. The most consistent findings from the survey reflect the nurses' belief that weight-related conversations were difficult because they lacked the confidence to conduct those conversations, and parental unacceptance of the problem impacted greatly on their ability to do so. Regarding MI, many nurses noticed a change in how they conducted weight conversations, even after receiving introductory MI training sessions. The themes reflect the struggles many nurses face in raising weight issues with parents and how they try to conduct what they perceive as sensitive conversations without jeopardising the patient-provider relationship. Across both the interviews and the survey, the nurses highlighted the biggest barrier to conducting the weight-related conversation was parent's lack of acceptance that their child had a weight problem, and/or low parental motivation to address the weight issue.

Chapter Four - Discussion

4.1 Chapter Introduction

Governments across the globe have implemented a range of strategies to address the alarming rate of children with high weight. The solution is to modify weight inducing behaviours which includes diet, exercise, and sedentary behaviours, with various forms of interventions offered to support whānau with this. The main barriers to intervention are parental non-acceptance of the problem and ambivalence or low motivation to change. In addition, health professionals are not always well-equipped to communicate with parents regarding the high weight of their child. This is concerning as nurses have been identified as a crucial first-step on the pathway to addressing high weight in children.

Experts in the field of health communication have strongly advised on substituting the directive style of interaction for a more collaborative client-centred approach for addressing children's weight. Motivational Interviewing has been widely recommended as a method of client-centred communication that could be effective in this context. Motivational Interviewing is an evidence-based style of communication that collaboratively engages the client in generating and strengthening motivation for changing behaviour.

The research on the effectiveness of nurse-led MI for referring high weight children for intervention has not been explored. What is known regarding nurse-led MI for changing a range of health conditions, is that it can be effectively used. However, MI as an intervention for high weight children is an underexplored field. Considering MI has been recommended by experts across the globe, including NZ, as an evidence-based communication method for weight-related conversations, there is a need to better understand whether these recommendations are feasible.

The NZ government introduced the Raising Healthy Kids target as part of a plan to address children's weight problems. This health target required trained B4SC nurses to identify and refer 95% of high weight children for clinical evaluation and family-based nutrition, physical activity and lifestyle interventions (Ministry of Health, 2018b). A crucial part of the referral process involved effective conversations with whānau to ensure uptake into these healthy lifestyle programmes occurred, for which MI was recommended.

The aim of the current research was to understand the experiences of the B4SC nurses involved in the referral process, and in particular their perceptions regarding communication with whānau and whether they utilised MI for this. The questions this research sought to answer were: What are the barriers to having effective weight-related conversations? What are the nurses' attitudes to lifestyle programmes? How do registered B4SC nurses perceive their competence to use MI effectively? How confident do the B4SC nurses feel in communicating with parents/caregivers of above healthy weight four-year olds, so that the parents/caregivers understand the health issue and want to be involved in lifestyle programmes?

4.2 Summary of Participation Results and Survey Findings

With an aim to capture as many responses as possible from the B4SC nurses, a survey was issued with an invite to participate further in focus group interviews. The final survey response rate was substantively low despite attempts to increase participation (see chapter 2, section 2.7). Less than 20% of the 108 potential participants agreed to take part in the questionnaire and 28% of those who completed the survey affirmed interest in the interviews. All participants in both the survey and interviews were female, and the majority worked in general practice. According to the survey the average length of time the nurses were currently in service was 8.9 years, with a SD of 5.5 years, compared to the B4SC nurses involved in the

interviews, who spent 5.6 years on average in their role as B4SC nurse, with a SD of 2.4 years. These numbers suggest a relatively experienced group of nurses participated in the research.

The main findings from the survey reflect the nurses' difficulties in conducting sensitive weight-related conversations with whānau. Whilst identifying high weight children was principally easy, their low confidence to address weight and refer whānau for intervention was problematic. Most nurses believed it was their duty to motivate and support whānau in changing lifestyle behaviours, yet under half believed they actually contributed to helping whānau change. What they identified as inhibiting their ability to help whānau change, was the lack of acceptance from parents/caregivers that their child had a high weight.

Regarding MI, most (74%) nurses had received MI training, consisting mostly of either one or two-hour presentations or one-day workshops. A similar number of nurses noticed a change in how they conducted weight conversations after this training, despite receiving only introductory training sessions. Overwhelmingly, all the nurses understood that direct confrontation was not helping in supporting whānau in changing health behaviours and that readiness to change and the responsibility to change remained firmly with the patient.

4.3 Themes

The themes that emerged from the interview data relate closely to the survey questions but provide greater detail on the experience. There were 10 themes that emerged from the thematic analysis – listed in order of frequency and importance. (1) The pressures of referring, (2) barriers to achieving effective communication – parental and nurses' barriers, (3) facilitators for successful conversations – nurses' characteristics and parental characteristics, (4) conversational strategies – specific skills, providing information, and avoiding guilt or shame, (5) nurses' commitment to patients, (6) beliefs about the child

weight problem and comments on their role in that, (7) characteristics of parents/caregivers, (8) MI – use of and training, (9) need for training, and (10) need for feedback and support.

The Pressures of Referring.

Part of the process of the Raising Healthy Kids Target was to ensure 95% of children identified as above a healthy weight ($\geq 97^{th}$ BMI percentile) were referred by B4SC nurses for further intervention and support to government endorsed lifestyle programmes. This placed pressure on the nurses to refer. It became crucial that the referral was successfully managed by the B4SC nurses to ensure intervention recruitment occurred.

The challenge was that once the children were identified as high weight – and this part of the process was declared easy to perform – communicating the need for referral had its complications. Underexplored is what impacts on referrals or the referral decisions made by health professionals. What limited studies have demonstrated is that parents are perceived as the greatest barrier to health professionals referring high weight children (Gerards, Dagnelie, Jansen, de Vries, & Kremers, 2012; Robson, Bolling, McCullough, Stough, & Stark, 2016). The nurses in this research commented on this barrier when they tried to suggest referral to lifestyle programmes. Essentially what impacted on the referral process was their confidence to discuss the issue with parents and therefore gain parental motivation to engage in lifestyle programmes.

The feeling of high expectation at an organisational level, with seemingly limited understanding of the difficulties the nurses faced when referring led the nurses to feel that they lacked support to perform this role. The dilemma the nurses faced was the requirement to refer high weight children with the challenge of parents unwilling to accept the referral. A repeated response to the pressures and difficulties was opting for a more acceptable referral option, namely the GP. This was considered an easier choice because it was considered less

intrusive for whānau compared to lifestyle programmes. Further, by referring to the GP instead, whānau were somewhat committed to attend a check-up in three months which was deemed far less demanding than the requirements of a lifestyle programme. Some whānau responded more agreeably with this option too which reinforced using this referral pathway. This meant the nurses fulfilled the referral requirement with less non-acceptance from whānau.

Further on the issue of referring, the nurses' attitudes towards lifestyle interventions were not always favourable. Some nurses believed that lifestyle programmes were too intrusive, possibly negatively impacting on the daily lives of the whānau. This was reinforced with some parents responding with great non-acceptance to such referrals. These findings are consistent with those of a previous study (Gerards et al., 2012) in which health professionals expressed their opposition to using lifestyle programmes because they believed there was little advantage to using them. The perceived disadvantage in the current study was that lifestyle programmes were considered to be too demanding, mostly due to time and financial pressures, but also because some whānau already had too many organisations involved in managing their lives.

Barriers to Achieving Effective Communication

In concurrence with other studies examining weight-related referrals (Gerards et al., 2012; Robson et al., 2016), the nurses in this research alluded to parental non-acceptance of the problem as the greatest hurdle to conducting weight-related conversations. Whether the non-acceptance presented as refusal to accept the diagnosis or misperceiving the child's weight, the conversation was deemed difficult or even impossible. Underpinning the perception that weight-related conversations were difficult was a lack of confidence to communicate with unmotivated parents. A recent review found that health providers perceived weight-related conversations with parents as difficult and as a result they were

reluctant to spend too much time discussing the issue (Reyes, 2015). A similar phenomenon described by the study nurses.

In the current study, parental non-acceptance of the weight problem was described as the parent misperceiving their child's weight by either normalising the child's size due to high birth-weight or familial traits. Some of the parents were described as expressing shock at being informed their child was above a healthy weight. A recent NZ health survey (Ministry of Health, 2015c) also had similar findings. The survey identified that 90% of parents of high weight children (aged two to four years) were less likely to think their child had a weight problem. The nurses found this type of belief difficult to navigate. There was a reluctance from the nurses in this research to challenge this thinking, or to assist the parent to consider the alternative perspective, that their child was of high weight. This unwillingness was due in part to the perceived risk of offending the parents. Furthermore, it has been suggested (Reyes, 2015) that parental misperception of weight can result in the parent disengaging from the conversation. Further, that an unexpected confrontational conversation regarding a child's weight can lead to parents feeling alienated and refrain from accepting weight intervention (Hutchinson, 2016). Consistent with this, the nurses in the current study alluded to occasions when parents reacted negatively to the weight conversation.

Some of the study nurses also misperceived children's high weight. Misunderstandings regarding high weight in children have been investigated in previous research. Robson found many practitioners remained divided on weight being a problem, especially if the child was born at a higher weight, or if the whole family was of high weight. In the current study, the belief that children would naturally grow into their weight was a concept that was reported to, at times, be shared by both parents and nurses. Rather than referring the whānau onto lifestyle interventions, the nurses with this belief would express the

idea that the child could grow into their size and a general check-up in a few months would suffice.

Another misperception of children's weight emerged in the form of a gender argument. The study nurses reported a common attitude from some parents of boys who dismissed the high weight as a problem based on gender. This phenomenon has been examined in previous research which, while not entirely conclusive, demonstrate a pattern whereby girls are stigmatised more than boys for being of high weight (Di Pasquale & Celsi, 2017; Tang-Péronard & Heitmann, 2008). An above a healthy weight girl can be the victim of social isolation due to her size, and a large boy can be revered for being seen as stronger or more powerful due to his size (Tang-Péronard & Heitmann, 2008). The nurses in the current study reported that when challenging this belief, they were met with non-acceptance from parents.

This highly sensitive conversation was exacerbated by negative feedback which added to the sense that it was a difficult conversation. Further, some of the nurses were cognizant of public backlash from irate parents of high weight children. Reading on-line comments damning nurses who had identified high weight children influenced how some nurses viewed this topic. There was also mention of clinics that had received complaints from irate parents. The same nurses had experienced negative feedback at a systemic level when referrals were not processed. This type of feedback from both parents and at an organisational level acted to intensifying the reasons for avoiding addressing or referring for high weight.

The more practicable condition that impacted on the nurses' ability to conduct effective weight-related conversations was discrepancies with the weight/BMI charts they used during the consultations. However, according to the nurses the weight and BMI charts had some design features that were problematic. The problem was that the BMI guide on the

weight chart was just a guide and it did not provide correct BMI measurements without the height and weight calculations that were required. This left the nurses questioning the validity of the charts. Being provided with a chart which included information that was seemingly inaccurate led some nurses and parents to question if the BMI calculator had inaccuracies too. What consolidated this thinking was their own interpretations of whether children were of high weight or not.

Facilitators for Successful Conversations

Already motivated parents were perceived as more inclined to receive weight-related information and to sometimes be more willing to accept a referral. When presented with receptive parents, the nurses in the current study found the conversation much easier to navigate. Some nurses felt better able to provide more information, help with setting weight-related goals, and make referrals. When the nurses interacted with motivated parents there was a sense that the willingness to adopt any health behaviour changes was already present. Moreover, parental motivation has been identified as a crucial indicator of whether children engage in weight intervention (Gunnarsdottir, Njardvik, Olafsdottir, Craighead, & Bjarnason, 2011; Perez et al., 2016). Some of the nurses reported experiences whereby parents of children who presented with a less elevated BMI were more receptive to weight-related referrals. It is uncertain why this seemed to occur. What needs exploring is the possibility that parents of less high weight children are more likely to recognise their child has some issue with weight.

Despite parental receptiveness to the information regarding their child's weight, it did not always translate into referrals. Sometimes the parents stated a preference to use their own methods for behaviour change and at their convenience, or at other times parents were unwilling to go beyond discussing it. In the cases when the parents expressed an intention to use their own methods, nurses recognised this motivation for change and had a sense of duty

to work with that motivation to engender changes, but sometimes lacked the conversational skills to develop the conversation or motivation further.

Nurses are in an advantageous position to address children's weight problems, and recommendations support utilising nurses for this cause (Barlow & Expert Committee, 2007; Snethen et al., 2016). Some nurses in the current study articulated the idea that because of their vocation they were therefore qualified to communicate on weight. Their sense of confidence derived from being a nurse and the wealth of experience they brought to the role. There was a sense of duty to provide health care to a level that ensured their patients were well informed and referred when required for weight problems. The nurses believed their patients also expected this from them.

Conversational Strategies

When the nurses were asked to elaborate on what transpired during weight-related conversations, there were comments on the type of questions they asked their patients. The questioning was often about their patients' daily lives, parental perspectives on their child's high weight diagnosis, and sometimes on specific lifestyle choices. It seemed the questions served the purpose to elicit greater understanding of the problem for both the nurse and parents. It has been demonstrated the use of specific questioning to understand the patients' viewpoint produces substantively more information about the patients' concerns and improves the patient-provider relationship (Lang, Floyd, Beine, & Buck, 2002). Further, asking patients what the weight information means to them, is a powerful and far less combative way for patients to make sense of the possible implications of the health diagnosis (Rosengren, 2018).

The other strategy some nurses employed was the use of pauses or giving patients the time/space to draw their own conclusions, make sense of the information, and sometimes

provide their own solutions. Again, this strategy seemed to allow for patients to understand the possible implications of the information for themselves.

Even with an understanding that the shift towards a more client-centred approach of communication is deemed more effective (Barlow & Expert Committee, 2007), the study nurses often acted as the expert on the patient's health and educated accordingly. This approach has been described previously, in which the patient was viewed as an "information receptacle" – and for some health providers there is a sense of duty to ensure patients receive all the vital information all at once (Rollnick, Miller, & Butler, 2008, p. 89). Some nurses in the current study believed patients expected this. However, the argument is that in many occurrences patients only appear to want this (Rollnick, Miller, & Butler, 2012). Despite the nurses providing information, they also acknowledged that this method does not always work.

The methods of information provision ranged from directly supplying specific information on the causes of the problem, to visual tools or aids, to indirectly informing patients of the problem, and educating them in some instances. An additional strategy sometimes used was providing information on the future risks to the child's health. The belief was this could inspire change now to prevent future risks. Research supports communicating future health risks with parents, but it is vital these messages are conveyed in a non-judgemental manner to avoid potentially evoking parental guilt (Bentley, Swift, Cook, & Redsell, 2017). The delicate line between effectively conveying future health risks and not alienating patients is dependent on the method of communication. Motivational Interviewing has developed specific guidelines for exchanging information or advice, so that it is provided in a collaborative manner and is more likely to be received positively.

In the current study, providing information was a strategy that had a habitual undertone. It was familiar, therefore easier to fall back on when the nurses were required to address children's high weight. According to previous research, when behaviour (providing information) is repeated in the same context (the clinical environment), the situation becomes a trigger for responding in the same manner – the assumption is that clinical practice can become habitual (Nilsen et al., 2012). Further, Nilsen et al (2012) argue that habitual behaviour can be difficult to change - for all people, health practitioners included.

Shame can play a central role across a range of health issues, in that shame can inhibit recognition of health problems (Brown, 2004; Stearns, 2017). It can evoke feelings of isolation, produce feelings of fear and a desire to escape or avoid the situation (Brown, 2004). Considering society can hold very high notions of good parenting and in the context of parents of high weight children, if societal expectations are not met (raising healthy weight children) and if health professionals reinforce these expectations, there is the risk that this can lead to shame-induced feelings (Brown, 2004; Weinblatt, 2018). The nurses in the current study were acutely aware of how relaying weight information could impact on how the whānau viewed their parenting or in some cases highlight the parents' own weight problems. There was a strong sense of the nurses doing anything they could to avoid evoking this shame. The most common approach reported was taking care in the language they used when addressing the weight issue. By using sensitive language the nurses demonstrated an awareness of how crucial the choice of words were in maintaining the patient's willingness to hear and engage with health information (Flemmer, Dekker, & Doutrich, 2014).

Nurses' Commitment to Patients

Essentially what underpinned the nurses' avoidance of inducing shame was their desire to establish and maintain the patient-provider relationship. Sometimes this relationship seemed to preclude the requirement to refer children for weight problems. Rather than risk

offending their patients, which could result in complaints or patients opting to leave the practice, the nurses opted for non-referral, even though this action could result in being questioned at an organisational level. The importance of the nurse-patient relationship was such that it was sometimes prioritised above addressing weight problems.

This need to maintain a positive patient connection is a valid concern. Research has shown that a good relationship has an association with better health outcomes (Phillips-Salimi, Haase, & Kooken, 2012). Moreover, the rapport nurses establish with their patients is crucial in ensuring patients return to the clinic, and supportive relationships have been found to be key to reducing malpractice complaints (Henry et al., 2013).

Commitment to their patients was expressed through the nurses' desire to demonstrate empathy or understanding of their patients. This included concern for the sort of lives that could impede on the ability of the whanau to attend lifestyle programmes, or an understanding that there were possibly many other issues that needed to be addressed before weight problems. This concern for patient welfare sometimes influenced the decision to refrain from referring.

An awareness of the time patients took to attend the B4SC appointments led to prioritisation of the time each component of the check entailed. This meant that some nurses were reluctant to spend too long on one item at the cost of other important issues. The impression for some nurses was that too much emphasis had been placed on the weight portion of the B4SC when there were so many other tasks they needed to complete during the B4SC and over the course of the day. Weighing up the importance of each task and the conversations involved was something the nurses were considerate of.

Nurses' beliefs about the child weight problem and comments on their role in this.

The expectation that nurses were responsible for the initial task of identifying, addressing and referring for weight problems led to some nurses feeling overwhelmed by this responsibility. They questioned why the onus was on them to be responsible for this and if they were under-prepared to tackle the task. Some nurses had the belief the wider community could be better served if there were more community-based initiatives, rather than a heavy reliance on nurses. That said, there was a general recognition amongst the nurses that this was an important issue and needed an intervention.

Some nurses brought to attention the role of children in this health issue. The belief was that inclusion of children in the weight conversation would be of greater benefit overall. These nurses actively involved children in the conversation either by addressing educational information to them or discussing how important they believed it was to gauge the child's perspective. This is consistent with research which has demonstrated the importance of including children in health care conversations, as it encourages them to take ownership of their health (Carcone et al., 2016).

Characteristics of Parents/Caregivers.

In the current study, the descriptions of the whānau involved in the weight-related conversations were offered by the nurses when reflecting on who was involved in these conversations and not in response to direct questions regarding the parents. The comments offered were indicative of a much wider issue across NZ and it was unsurprising the nurses in this study reflected on this. The latest NZ health survey results demonstrated children from the most deprived demographics, alongside Maori and Pacific Islanders, had the highest rates of weight problems in NZ (Ministry of Health, 2018a). The descriptions of the whānau provided by the nurses were consistent with the health survey. Furthermore, those from the most deprived were remarked upon by the nurses as being hardest to reach, with the

implication that these whānau were less likely to engage in intervention because of limited access to healthcare. This observation is also supported by recent research demonstrating that children from low-income demographics were less likely to enrol in weight intervention programmes (Hernandez, Thompson, Cheng, & Serwint, 2012; Ligthart, Buitendijk, Koes, & van Middelkoop, 2016; Russell et al., 2016).

Use of Motivational Interviewing

MI was recommended by the NZ Ministry of Health as an evidence-based alternative method of communication to be used during the B4SC encounter for addressing weight problems (Ministry of Health, 2015b). As it was an endorsement rather than a requirement, the MI training and therefore skills acquired were minimal and variable. This was evident with the inconsistent use of MI. Some stated practising MI during weight-related conversations but were selective in its use. Others remarked on a desire to be able to use it but felt incapable of doing so.

The nurses who commented on using MI in their work had a relatively high degree of confidence communicating in this setting. The confidence to communicate derived from a good sense of self-efficacy, shaped by their role rather than training they had received in MI. Those that reported to use MI were willing to practice when they could, suggesting a confidence to try a new method. However, they were selective in how or when it was applied. This was expressed during statements regarding only using MI on the occasions they believed it would work or when they felt the parents were already motivated. This is inconsistent with what is known about the efficacy of MI as a method to which minimises non-acceptance, resolves ambivalence and increases motivation to change (Miller and Rollnick, 2013). The times that MI could have been effective were when patients were ambivalent or unmotivated, and this was when the nurses reported not using it.

There were some MI skills the nurses alluded to utilising. Asking permission to provide information was directly mentioned. Why this is important is because asking permission to provide information recognises that health professionals sometimes have information they deem vital for the patient's situation, but it is only useful if the patient wants to hear it. When done well, this reinforces the concept of the patient overseeing their health so information sharing becomes a joint experience (Rosengren, 2018) and honours the collaborative nature of MI. Reflecting what the patient said was another skill nurses reported using. Reflective listening is deemed a core MI skill and when executed well, reflects an understanding of experience and communicates accurate empathy (Arkowitz et al., 2015; Miller & Rollnick, 2013). Complex reflections can take a lot of practice and time to master but when applied effectively can have the effect of drawing out underlying beliefs the client may have around the health condition (and themselves), and can also provide the MI practitioner with a means of guiding the conversation (Resnicow, McMaster, & Rollnick, 2012). Open-ended questions were reported to be used to better understand the patient's viewpoint on the problem. By asking questions on what the parents thought of the information regarding their child's weight status, it offered the space for parents to share their concerns or understandings.

However, without recording the B4SC sessions there is uncertainty whether the nurses use any of these MI skills or if there are any other MI consistent behaviours or skills they had acquired. For those schooled in the expert-driven method changing to client-centred communication can be a difficult task (Nilsen et al., 2012). Learning a client-centred communication method such as MI requires practitioners to undergo a process of unlearning MI-inconsistent behaviours associated with directive communication. This can be difficult for those with more experience in their given field (especially if they were schooled in the directive method) and can require intensive MI training to address entrenched behaviours that

hinder learning MI (Schumacher et al., 2014). Furthermore, interchanging from one communication style to MI within a conversation can be a challenge even for well-trained professionals (McNeil, Addicks, & Randall, 2017).

The nurses referenced times when applying what they had learned was difficult. The nurses reported reverting back to habitual communication methods when the circumstance seemed either too challenging or it was deemed unnecessary to use MI. This notion is consistent with a qualitative study of primary care nurses who had been applying MI in their work over the course of a year, which reported a significant barrier to learning and using MI was an adjustment of thinking associated with learning a new style of communication (Söderlund et al., 2008). Changing well established behaviours can sometimes require intensive effort which can explain the reasons for reverting back to familiar behaviour or thinking patterns – the familiar is less taxing.

Training in Motivational Interviewing

Most of the nurses in the current study reported having attended at most 1-day MI training workshops, with no follow-ups reported at the end of the training. Previous research on MI training and implementation shows that one or two day workshops are merely an introduction to the method providing an introduction to MI, and without further coaching post-workshop the learning will not be retained (Arkowitz et al., 2015). Research on training nurses in MI has demonstrated a large variation in the delivery of the training and in the level of proficiency attained by the clinicians, with an overriding message from these studies that introductory levels of MI training are not sufficient to produce a beginner level of competency. (Bohman et al., 2013; Jansink et al., 2013; Maissi et al., 2011; Mertens et al., 2016).

The lack of knowledge and confidence to use MI reported by the nurses in the current study suggests they may not have been trained sufficiently in MI to use it in their work. The nurses also reported training barriers of lack of time or pressure to fulfil various professional development requirements, which meant some nurses felt they had to prioritise what training they could accomplish. Despite all this, the nurses attempted to apply what they had learned of MI, and some had supplemented this training with their own learning.

(Keeley, Engel, Reed, Brody, & Burke, 2018) recommend, based on their research on MI in primary care, that at least 20 hours of training in MI is provided in the first year and four to eight hours in subsequent years to either maintain learning or build skill level. Furthermore, that training should focus on eliciting "change talk" rather than behaviour change (Keeley et al., 2018). The most training on MI the nurses in the current study received was a one-day workshop. Without recording the B4SC sessions though, it is unclear exactly what communication methods are being used or what MI techniques have been acquired. That said most nurses during the interviews expressed a sense that they were beginners at best and had a desire to learn MI.

When discussing the MI training they had received, they provided little detail about what was covered during the training. Sometimes the recollection of what occurred was vague. There were suggestions to tailor the training to better reflect the B4SC experience. Whether that meant including how to involve children in the discussion or role-playing various weight-related conversations. Currently, it is uncertain whether tailored MI training is any better than a more general approach to MI training (Madson, Lane, & Noble, 2012). Madson et al. (2012) suggest it may depend on the organisation, health issue or the practitioners being trained.

Learning how to involve children in weight-related conversations was an important consideration highlighted by the nurses. Positive results have been found with child participation during clinical visits - it builds rapport, children become attuned to the patient role, and in the long term involvement can improve intervention adherence (Carcone et al., 2016). However, integrating the child into clinical conversations can be a challenge but MI may be advantageous in this regard (Vigilante, Hossain, Wysocki, & Sharif, 2015). There are few instances of research including young children during weight-related conversations (Saelens et al., 2013; Tyler & Horner, 2016), and most studies were aimed at counselling parents. Whilst there appear to be benefits of including children in their healthcare, health practitioners may struggle to incorporate children into these conversations due to a lack of confidence and/or the skills to involve children in these conversations.

For MI training to be fully effective feedback is vital, which is also true when learning any different communication method. Post training feedback and coaching is imperative for retention of MI skills learned as, without feedback, there is a great risk that any skills learned will erode over time (Miller, Yahne, Moyers, Martinez, & Pirritano, 2004; Schwalbe et al., 2014). A recent meta-analysis of MI training concluded that approximately three to four feedback sessions post-workshop training are required to retain learning (Schwalbe et al., 2014). Receiving feedback offers the learner support and direction until they have acquired a good level of self-competence. In the current study, feedback was an important component of the MI training that was seen to be missing. There was an overall sense of uncertainty among the nurses regarding their performance during these conversations. They were left to determine their own level of success and ability. Feedback could resolve some of this.

Further it was suggested that a whole clinic approach to learning and the implementation of MI would provide support for learning MI, improve performance and increase job satisfaction. This observation is consistent with research which found that

training a whole clinic in MI resulted in improved patient satisfaction, less provider burnout, increased perceived MI acquisition, and improved staff relationships (Pollak et al., 2016).

4.4 Implications of the study.

The findings of this research emphasise the challenges the B4SC nurses encountered during the weight-related conversations and referral process. The biggest barrier to referring or addressing weight with parents was parental lack of awareness that there was a weight issue or non-acceptance of the issue. Parental lack of acceptance of the problem posed a significant barrier to referring to interventions other than the GP. Non-acceptance of a child's weight status is problematic because it could increase the likelihood for the child to remain of high weight. Research findings have demonstrated that parental misperception of a child's weight is the strongest predictor of the child remaining at a high weight (McKee et al., 2016). According to the Ministry of Health, parents of children aged under five years were more likely to misperceive their child's weight than parents of older children, with 90% believing their child to be neither under nor overweight (Ministry of Health, 2015c). This is concerning given that if a child is of high weight by the age of four, the chances of that child remaining above a healthy weight into adulthood substantively increases by 20% (DeMattia & Denney, 2008). Therefore, it is important that the nurses providing the B4SC have the skills and confidence to work with parental non-acceptance.

The B4SC nurses noted that referring whānau back to the GP was less demanding and was a preferable option for the whānau involved. Considering research demonstrates GPs also struggle with weight-related conversations, referring to the GP may only serve to momentarily deflect the problem (Anderson et al., 2015; Carcone et al., 2016; Hutchinson et al., 2016; Levinson et al., 2010; McHale et al., 2016).

The nurses were concerned that they met their role obligations and because it was familiar, used directive communication techniques to address weight problems. There was some recognition that using directive communication to provide information to patients and advising patients on how to modify weight inducing behaviours on its own, was not effective, as research has also found (Barlow & Expert Committee, 2007). However, without the confidence or sufficient training in MI or to communicate in a client-centred manner, the nurses had to employ whatever communication method they were acquainted with, and therefore whānau were not supported as much as they could be.

Based on growing evidence of its effectiveness, MI was recommended as an ideal client-centred communication method to be used during these weight-related conversations (Ministry of Health, 2015b). Without a training and implementation plan, organisations resort to using short training workshops in an attempt to train staff in MI. Unfortunately, these short workshops may not provide the opportunities for nurses to unlearn habitual directive-communication, which is a necessary step in learning client-centred counselling techniques such as MI (Schumacher et al., 2014). This is consistent with the B4SC nurses' comments regarding the insufficiencies of the MI training they received and that they were not confident to use MI.

Despite some training in MI it was not adequate for the B4SC nurses to confidently utilise MI in the situations it is likely to be most effective – with parents who did not accept there was an issue, or who were ambivalent or had low motivation for change. When faced with these situations the nurses reported reverting back to familiar communication methods. Nevertheless, the nurses were cognizant of the benefits of using MI for behaviour change counselling and there was a desire to learn the method. The skilful use of MI during these difficult conversations with whānau about children's weight could help both the nurses with their confidence to discuss weight issues and the parents to accept their child's weight

problems and increase their motivation to address it. For this to eventuate the current level of MI training and ongoing support for B4SC nurses needs to be addressed.

Concerning governmental expectations that B4SC nurses are responsible for referring high weight children and their whānau for weight intervention, it is essential to better understand what is occurring during these conversations. It is important to understand what the nurses encounter in terms of the barriers to conversing with whānau. The results of the current study suggest that these barriers include lack of confidence to conduct sensitive weight-related conversations and parental non-acceptance of the child's high weight. With this knowledge, a better training and support plan could be implemented to improve communication performance and governmental expectations more likely to be achieved

4.5 Limitations of the Study.

Some challenges emerged during the course of this research. The biggest challenge was the inability to attract substantive participation in the survey. This was despite a number of steps taken to garner participation. The survey was issued via an official organisational avenue with their added support, the invitation letter clearly outlined the project, the anonymity aspect was highlighted, the brief nature of the survey was stated, as was the option to only participate in the survey without the obligation to take part in interviews, and repeated reminders were issued to encourage participation in the survey. Yet only 18 out of the possible 108 B4SC nurses completed the entire survey. However, the focus interview participation was better, in comparison to the survey participation. Eight nurses took part in either individual or focus group interviews. Therefore, the data collected may not accurately represent the experience of the B4SC nurses throughout the Canterbury region or across NZ.

Another limitation was with missing data. Although most of the respondents who consented to the survey completed most of the survey questions, approximately 5%

discontinued the survey after completing the first two sections. The third section on MI had the most response variations, 95% of participants completed survey items on MI confidence, training, and training in other methods, but the greatest missing data were in response to training duration (only 72% completed this question) and the type of training (only 56% completed this question). For the final two sections, all 18 participants completed all items. In anticipation of respondents not completing each item or question skipping, the function to alert participants when they had not completed survey items was enabled, however, it was able to be overridden. It is possible that time constraints or the inability to answer questions related to MI may have impacted on the participants decision to discontinue.

Another limitation identified during data analysis was the inability to correlate the type of training with the duration of that training (see survey question 7 in Appendix G and Table 3). Unfortunately, this was not considered during the construction of the survey. For example, this meant aligning one-day workshops with the type of training programme was impossible.

In anticipation of higher survey participation rates, focus groups interviews were planned to cover an expected larger number of participants. At the conclusion of the survey, with low response rates, any type of interview (i.e., group or individual, in person or via telephone) was allowed for to facilitate as much participation as possible. The first challenge that occurred during interview preparation, was potential participants not responding to interview scheduling emails. The other challenge that emerged was from someone who wanted to attend an interview but was concerned over a conflict of interest. Despite emphasis on the confidentiality aspect of the interviews, this potential participant declined over concerns this may affect their work. Interestingly, a GP became aware of the research and provided some insights on the issue, but this information could not be used. Another issue that arose during the time of organising focus group interviews was the inability to arrange

times and places that suited all focus group participants. Fortunately, the nurses in this circumstance agreed to individual interviews.

Another limitation regarded no follow-ups after the interviews. There were some questions that arose during data analysis that could not be confirmed. For instance, questions relating to what the experience was like when discussing weight-related conversations with children in the room and whether this was difficult or easy. Follow-ups were not part of the methodology in due consideration of time constraints for the nurses but would have been helpful to clarify some issues and check interpretation of the meaning of interview comments.

Furthermore, the interviews were conducted by a sole researcher, which can impact on how questions are answered. The same interview administered by different interviewers could evoke entirely different responses (Davis et al., 2010).

Finally, the data relied on the nurses' perspectives, which remained open to social biases. The inability to record the B4SC sessions meant this research relied on the nurses accurately recounting their experiences. Furthermore, the research was unable to account for the experiences of the whānau involved. Included instead were the nurses' interpretations of what the experience was like for whānau. This means the results are based on self-reports, which remain open to social acceptability bias and neither could these accounts be confirmed in any other way (Davis et al., 2010).

4.6 Recommendations for Future Research

With the limited number of nurses who participated in this study, further larger scale research is needed for improved understanding of weight-related conversations during B4SC. This is vital due to governmental demands for nurses to identify, address and refer children with weight problems.

The first step may be to conduct a nation-wide survey. If possible, it would be useful to match the survey responses to data from whānau that are successfully referred to lifestyle programmes and compare this to whānau that are either not referred or referred to only the GP. This would provide quantitative results that could be compared to the qualitative experience.

In addition, in order to understand what is being said during weight-related conversations, recording sessions would be helpful. This would provide a more accurate method to determine what communication skills are used and how effective these are.

It would also be useful to interview the whānau that have been through a B4SC conversation about high weight. This could provide further insight into what is occurring during the conversations and what the whānau experience of this process, and whether it was experienced as facilitating or inhibiting their involvement in lifestyle programmes.

4.7 Conclusions

Given part of the Ministry of Health plan to address children's weight problems is to refer a substantial number of high weight four-year olds onto lifestyle programmes, it is imperative those responsible for referring (the B4Sc nurses) are well-equipped to communicate with whānau on weight problems. Policy makers need to be aware of the challenges the B4SC nurses encounter when addressing children with weight problems. If this small study sample is an accurate measure of the experience overall, the nurses find the weight-related conversation difficult. However, they were determined to fulfil their role obligations and employ whatever method they had at their disposal to ensure whānau were referred. Often these referrals were to the GP rather than lifestyle programmes because this was less demanding for the whānau and nurses. The problem is the premise behind the healthy kids target is for the whānau to be referred onto lifestyle programmes. The inability to

refer beyond the GP stemmed from lack of confidence to effectively communicate with whānau about weight problems. Parental non-acceptance of the problem and patient resistance was identified as significant barriers to conducting what was perceived as a highly sensitive conversation. As part of a package of recommendations, the government suggested using MI as an appropriate evidence-based method of communication to overcome the challenges that could arise in such difficult behaviour change conversations. Nonetheless, in the absence of clear training guidelines, the MI training delivered seemed to serve more as an introduction rather than providing nurses with MI skill acquisition. With adequate training and support the nurses may be better equipped to conduct these conversations.

Tables for Literature Review

Table 1: Motivational Interviewing for Above Healthy Weight Children (Effectiveness Highlighted).

Reference: Author and Year	**Sample size, participants, duration & location**	**Intervention outcomes**	**Comparator intervention**	**MI intervention**	**MI interventionists (includes training) and MI fidelity**	**Health Behaviour Change results as reported by the author(s)**
Berg-Smith. 1999	334 children aged 8-10 with elevated LDL-C levels. 6 to 9 years. No details on ethnicity or income Equal ratio of girls to boys U.S.A Medical clinics No blinding	Dietary changes to lower elevated serum levels of LDL-C	Usual care	Face-to-face MI sessions and follow-up phone calls (various numbers) lasting for 5 to 30 minutes. With parents initially, then changed to individually with adolescents as the children aged. Goal was to address adherence and retention levels to weight management programmes	Master's degree students and nutritionists trained for 18 hours with supervision No fidelity mentioned	Analyses performed according to intent-to-treat. *P*-values adjusted differences between groups and confidence intervals around the differences calculated. At 3 years dietary fat ($p \leq 0.001$) and saturated fat and cholesterol ($p \leq 0.003$) decreased significantly. Self-reported adherence scores increased ($p \leq 0.001$), despite adherence weakening in later years; researchers changed delivery to individualised to better suit teenagers. Similar results for girls and boys.
Dalton. 2013	39 Caucasian children aged 5-11 years. 23 boys, 16 girls from lower SES demographic. BMI $\geq 85^{th}$ percentile. 10 weeks. U.S.A. Primary care clinics. No blinding	Parent reported HRQoL	Usual care	MI delivered face-to-face individually to parents for 2 sessions (15 minutes by the physicians). 4 group sessions and 4 phone follow-ups conducted by research staff.	Physicians received 8 hours of on-line training, including how to implement the We Can! Curricula. No fidelity	Multi-level growth model used to track changes over time. No significant HRQoL improvements over all HRQoL domains (p=0.687).

Reference: Author and Year	Sample size, participants, duration & location	Intervention outcomes	Comparator intervention	MI intervention	MI interventionists (includes training) and MI fidelity	Health Behaviour Change results as reported by the author(s)
Davoli. 2013	372 Italian children aged 4-7 years. 229 girls, 143 boys. Parental education level (majority were less than or up to 13 years) BMI ≤85th percentile to 95th. 12 months duration. Italy Primary care clinics. No blinding	1.BMI changes 2. Positive changes in diet and exercise	Routine care with weight prevention booklet	5 individual face-to-face with parents. Goal to motivate changes in diet and exercise.	Paediatricians received 20 hours training in MI. No fidelity	Intent-to-treat analysis with multilinear models used to test influence of paediatricians on intervention effectiveness. MI group had significantly lower increase in BMI than control (increased on average by 0.49 and 0.79 (p=0.49)). MI effect stronger in girls (p=0.72). No effect on boys or mothers with low education (education level effect p=0.008). MI group had more positive diet changes (sweetened drinks and food positive change p=≤001) and exercise changes (non-organised PA p=0.007). Self-reported results
Saelens. 2013	72 Caucasian whānau with children aged 7-11 years. 36 girls, 36 boys. Middle-income demographic. BMI ≤85th percentile. 2 years duration. U.S.A. Paediatric offices Participants and data collector blinded	1. BMI 2. Changes in parental self-efficacy for helping their children begin and sustain healthy weight-related behaviours	Information on healthy eating and physical activity for both groups. The comparison group had prescribed intervention.	MI was included in the self-directed group. All information provided was the same for the comparison group. Goal was that MI approach would increase accountability and autonomy which would lead to greater goal assignment/achievement. MI included in 20 sessions and individual with parent/child dyad for 20-30 minutes.	Doctoral or masters' level students with behavioural intervention backgrounds trained in MI for 14-16 hours. Weekly supervision mentioned.	Intent-to-treat analyses using *t*-tests and chi-squared tests examined treatment condition differences. Both approaches yielded significant weight loss. Child BMI z-scores decreased significantly (p≤.001) for both groups, but no between group differences noted (p=.25). Parental BMI z-scores decreased significantly (p≤.001) for both groups, but no between group differences (p=.46) No differences between the groups for parental self-efficacy (p=0.68).

Reference: Author and Year	Sample size, participants, duration & location	Intervention outcomes	Comparator intervention	MI intervention	MI interventionists (includes training) and MI fidelity	Health Behaviour Change results as reported by the author(s)
Taylor, 2013	197 children aged 6 years. 108 girls. Mostly pakeha (Caucasian). Low-mid SES. BMI ≥85th percentile. 9 primary care practices or secondary care clinics in the south of New Zealand. 24-month duration.	Assessment of increased recruitment into a lifestyle service.	BPC included a traffic light system to provide weight-related feedback to parents. Avoided use of overweight or obese terminologies.	MI used to explore knowledge and expectations around their child's weight status before providing BMI results. MI delivered face-to-face individually for 1 30-minute session.	Trained researchers delivered MI. The 40-hours training occurred over 3-months. This was completed both on-line and during a 2-day workshop. Sessions that were video-recorded were coded (MITI) and researchers given feedback. They were not highly proficient but had good fidelity to MI spirit.	Independent t-tests and multivariate regression and univariate analysis used with an Intent-to-treat analysis. MI and BPC were both successful techniques for referring parents. No differences in recruitment p=0.17. Parents in the MI group had higher self-determined motivation for healthier lifestyles
Van Grieken. 2013	637 children aged 5 years. 242 boys. Dutch: Medium to high education for parents. High weight not extreme high weight. 2 years duration. Netherlands youth health centres. Participants blinded	BMI and waist circumference.	Usual care during well child visits.	Lifestyle counselling and MI, with information on weight prevention and healthy lifestyle choices. There were 4 individual face-to-face MI sessions with parents at approx. 24 minutes in length. Averaged 2 sessions. Goal to motivate parents to change health behaviour.	The only mention to training was that Paediatricians trained in a non-directing style in a 1-day workshop. No fidelity	A post-hoc analysis occurred, and a regression model used to assess the main effect for the interaction variable and an effect for the interaction term (research condition times interaction variable). There was no significant difference in BMI increases between the groups (p=0.463). Children with a BMI of 17.25 and 17.50 in the intervention group had a smaller increase in BMI than control group (estimated adjusted mean difference 20.67, p=0.02 and 20.52, p=0.05). No significant differences in waist measurements between groups (p=0.51).

Reference: Author and Year	Sample size, participants, duration & location	Intervention outcomes	Comparator intervention	MI intervention	MI interventionists (includes training) and MI fidelity	Health Behaviour Change results as reported by the author(s)
Small. 2014[4]	60 mostly Caucasian children aged 4-8 years. 36 girls & 24 boys. Most mothers held some college ed. Were of either high or extreme high weight. 6 months U.S.A. Primary care offices. No blinding	BMI and waist circumference.	Safety information based on preventing injuries a home.	Healthy lifestyle information and MI. 4 MI sessions delivered face-to-face with parents of 30-60 minutes in length. Goal was to collaborate with parents on making health behaviour changes.	Trained research assistants. No specifics on where or with whom. Intervention fidelity checked through assessment checklists	Data was analysed by comparing the treatment group over time interactions. Children in MI group found to have reduced waist circumference at 3 months measurements (p=0.03)) and waist-by-height ratio (WHtR) measurements (p=0.02). There was a medium effect on waist and WHtR. BMI not differentially affected as both groups reduced BMI (p=0.02).
Resnicow. 2015	645 children aged 2-8 years, 366 girls. Predominantly white, lower SES and less educated. BMI ≥85th and ≤97th percentile. 2 years duration. U.S.A. Clinical practices. No blinding	BMI	Group1. Usual care (measured BMI)	Gp 2: 4 MI sessions delivered by physician to parents face-to-face, individually. Gp3: Same as above and 6 MI sessions with a dietitian (first individual face-to-face and over the phone). Goal to test efficacy in treating paediatric weight issues, and to ascertain if additive sessions by a RD makes a difference.	Paediatricians and dietitians were involved in a 2-day workshop, including regular supervision. MI sessions were recorded and rated (MITI coding).	Primary analyses based on intent-to-treat and post-hoc exploratory results based on low and high dose MI> Group 3 BMI mean was significantly lower (p=0.02) than group 1.

[4] This study reported a medium effect size in favour of MI. As this neither confirms absolutely that the intervention was significantly effective or not, the non-significant colour coding has been applied to this study.

Reference: Author and Year	Sample size, participants, duration & location	Intervention outcomes	Comparator intervention	MI intervention	MI interventionists (includes training) and MI fidelity	Health Behaviour Change results as reported by the author(s)
Tyler. 2015	74 children aged 8-12 years, mostly Hispanic, 42 girls. Low SES. BMI ≥95th percentile. 9 months duration. U.S.A. School-based health clinics No blinding	BMI, QoL, and biomedical measures.	Weight management information provided.	Same weight management information given, and 5 MI based counselling sessions were delivered face-to-face with child/parent dyad and lasted 30 minutes. .	The school nurse conducted the counselling sessions. Counselling based on MI techniques. No mention of training. No fidelity	Repeated measures analysis of variance and covariance in hierarchical linear model approach were used. LDL-C remained in the normal range for the intervention group but not the comparison, with a difference of (p=0.03). Cholesterol and triglycerides remained on a better trajectory also. BMI z-scores significantly lower for both groups (p=0.005). There were no significant differences between groups for QoL, as both groups reported an increase over time. Compared to those who dropped out, BMI (p=0.036), insulin levels (p=0.014), QoL (p=0.047) and waist circumference (p=0.03) were higher in the drop-out group, compared to MI group.
Rifas-Shiman, 2017	474 children aged 5 years, mostly white (57%). 51% boys. Low SES. BMI ≥ 95th percentile or 85th < 95th percentile. 10 paediatric practices in Massachusetts, U.S.A. 2 years duration. Blinding not mentioned.	Primary outcome: BMI. Secondary outcome: reduced T.V viewing, fast food and sugary drink consumption	Usual care received 2-year follow-up	Intensive 1-year intervention included MI and education targeting TV viewing and consumption of fast food and sugary beverages. MI delivered with parents via 4 face-to-face, individualised 25-minute sessions and 1 phone call for 3-15 minutes.	Paediatricians trained in brief MI. No mention of fidelity.	Intent-to-treat analyses used. Small changes in intervention. Both groups had similar changes in BMI (−0.21 kg/m2 p=0.15), greater decreases in TV viewing (−0.36; p=0.01) and had slightly greater decreases in fast food (−0.16 servings/week p=0.07) and sugar sweetened beverages (−0.22 servings/day p=0.15). Significant effects on BMI among females (−0.38 kg/m2; p=0.03) but not males (0.04 kg/m2; p=0.89) and among children in households with annual incomes $50,000 or less (−0.93 kg/m2; 95% CI: −1.60, −0.25; p=0.01) but not in higher income (0.02 kg/m2; p=0.92)

Table 1 information

QoL, quality of life; MI, Motivational Interviewing; BMI, Body Mass Index; PA, physical activity; MITI, Motivational Interviewing Treatment Integrity instrument; HDL-C, high density lipoprotein cholesterol; HRQoL, health related quality of life; LDL-C, low density lipoprotein cholesterol; RD, registered dietitian; RN, registered nurse; SES, socio-economic-standing; TV, television

Colour Key Code

Significantly Favours MI
No difference
Significantly favours comparator intervention

Table 2: Nurses' Use of Motivational Interviewing Trending Towards a Positive Effect

Reference author and year	Sample size, participants, duration & location	Intervention outcomes	Comparator intervention	MI intervention	Nurse interventionists, training in MI and MI fidelity	Health behaviour change results as reported by the author(s)
McHugh, 2001.	98 patients. 75% male. 62 years age. No other details. Hospital in Scotland. 15 months duration. Blinding not mentioned.	Smoking status, high weight, PA, anxiety and depression, general health status, and number of patients exceeding target values for BP, plasma cholesterol, and alcohol consumption.	Usual care.	A shared care programme consisting of health education and MI. MI delivery at home or in general practice. 15x sessions face-to-face. No duration stated. Focus on behavioural risk factors.	No mention of training or fidelity.	Independent sample paired t-tests used. IG more likely to stop smoking p=0.001, reduce BMI p=0.01. SBP improved by 19.8% vs 10.7% decrease in the CG ($p = 0.001$) and DBP improved by 21.5% vs 10.2% in the CG ($p = 0.000$). No significant differences with cholesterol concentrations. Significant improvement in health status scores, with changes in difference in mean scores between the groups ranging from 8.1 ($p = 0.005$) to 36.1 ($p < 0.000$). Levels of anxiety and depression improved ($p < 0.000$) and there was improvement in PA time ($p < 0.000$)

Reference author and year	Sample size, participants, duration & location	Intervention outcomes	Comparator intervention	MI intervention	Nurse interventionists, training in MI and MI fidelity	Health behaviour change results as reported by the author(s)
Curry, 2003.	303 patients. 100% women. 34 years mean age. 63% African American. Low SES. Health clinics in Seattle, U.S.A. 12 months duration. Blinding not mentioned.	Self-reported abstinence from smoking.	Usual care.	Motivational message, quit smoking guide, 10-minute MI. Delivery was face-to-face, individually for 13-minutes, with 3x phone calls.	8-hours training with regular supervision. Fidelity included recorded phone conversations with feedback.	Intent-to-treat and complete case analyses. No p-values. Abstinence rates were greater in IG than CG. (7.7% vs 3.4% and 13.5% vs 6.9%). Low attrition.
Alwyn, 2004.	91 patients. 43 years mean age. 59% male. No other details. Cardiff and the Vale Community NHS, Great Britain. 12 months duration. Blinding discussed.	Abstinence from alcohol consumption, reduction, and total days alcohol use.	Usual care received 5 home visits for administration of detoxification medication.	Community psychiatric nurses administered brief intervention which involved MI, coping skills, training and social support. Delivery was in-home, face-to-face for 30 minutes. Focus on motivation to change, cognitive coping skills and support.	Statement on nurses trained in therapy, with supervision.	Repeated measures analysis of variance. Significant differences in alcohol consumption, alcohol related issues, social satisfaction, and self-esteem. Abstinence days improved in IG p=0.004, abstinence or moderate drinking p=0.01, total alcohol units p=0.002, drinks per day reduced p=0.005, time to first drink after treatment p=0.011, alcohol related problems p=0.048, social satisfaction p=0.020, significant treatment effect p=0.001.

Reference author and year	Sample size, participants, duration & location	Intervention outcomes	Comparator intervention	MI intervention	Nurse interventionists, training in MI and MI fidelity	Health behaviour change results as reported by the author(s)
Bennett, 2005.	111 participants. 67 years age. 64% female. No other details. Centre for healthy aging Oregon Health and Science University. U.S.A. 6 months duration. Blinding not mentioned.	General health, energy, social role/activities limitations, health distress, illness intrusiveness, disability, pain, shortness of breath.	Usual care from their general practitioner.	Nurse coaching using MI. 1x MI face-to-face for an hour and 1x phone (10 minutes) and email. Focus on health behaviour change.	24-hours of MI training. Checklist and scripts used to guide the use of MI.	ANCOVA analysis used. Significant differences noted on health distress. Illness intrusiveness decreased p=0.001 and health distress decreased p=0.006.
Borelli, 2005.	98 nurses and 278 patients. 54% female. Mean age 57 years. 83% Caucasian. Low SES. Home care. U.S.A. 12 months duration. Blinding not mentioned.	Smoking cessation.	Standard care involved guidelines for smoking cessation.	MI with carbon monoxide feedback. MI delivered 3x face-to-face individually for 20-30 minutes and 1x 5 minute phone call. Focus on smoking cessation.	Nurses trained in groups of 10 with booster sessions. Fidelity involved audiotaped sessions and monthly meetings.	Intent-to-treat analyses. IG had greater quit attempts and greater reduction in the number of cigarettes smoked per day all *P* values <0.05.
Beckham, 2006.	26 participants. 58% women. 97% Caucasian. No age details. Low SES. Community health care centres in Idaho, U.S.A. 6 weeks duration. Blinding details unavailable.	Alcohol use.	Control had no treatment.	MI sole element of intervention. Delivery comprised of 1x 45-60 minute face-to-face session. Focus on alcohol use.	No particulars on training or fidelity.	Analysis included a repeated measures design with time. Significant difference noted on drinks consumed p=0.0037 and liver function p=0.036.

Reference author and year	Sample size, participants, duration & location	Intervention outcomes	Comparator intervention	MI intervention	Nurse interventionists, training in MI and MI fidelity	Health behaviour change results as reported by the author(s)
Maneesakorn, 2006.	32 patients. 72% male. 41years age. Unemployed. Thai nationals. Hospital. Thailand. 9 weeks duration. Blinding details unavailable.	Primary outcome: overall psychotic symptoms. Secondary outcomes: general physical functioning, attitude towards and satisfaction associated with antipsychotic medication and medication side effects.	Standard care.	CBT and MI. focus on belief and attitudes towards medication. 8 face-to-face individualised sessions and 1 DVD for 15-60 minutes.	Mentioned the nurse was trained in the therapy. No fidelity checks.	Intent-to-treat analyses showed a significant improvement of psychotic symptoms and change in attitude towards medication in the CBT and MI group. Overall psychotic symptoms p=0.001, attitude toward medication p=0.001, medication satisfaction p-0.019, and clinically significant reduction in symptoms p=0.001.
Persson, 2006.	412 patients. 60 years age. 57% male. No other details. Primary health care centres in Sweden. 12 months duration. Blinding details unavailable.	Self-reported smoking habits at study duration.	Control group received information on smoking cessation.	MI and smoking cessation education. Delivery consisted of 8x group sessions for 45-60 minutes and 3x phone calls after quit day.	½ day training in MI and smoking cessation. No mention of fidelity.	No data analysis methods stated. Statistically significant results after 12 months, IG stopped smoking p<0.01.

Reference author and year	Sample size, participants, duration & location	Intervention outcomes	Comparator intervention	MI intervention	Nurse interventionists, training in MI and MI fidelity	Health behaviour change results as reported by the author(s)
Green, 2007.	200 participants. 67 years mean age. 58% male. No other details. Outpatient clinic in Canada. 3 months. Data entry personnel blinded.	Primary outcome: Knowledge, acquisition, and retention of stroke education. Secondary: changes in individual lifestyle risk factors.	Control group.	Education-counselling interview included MI. Delivery was individualised face-to-face for 15-20 minutes. Focus on health behaviour change.	No training or fidelity mentioned.	Intent-to-treat analysis showed a statistically significant difference between groups in stroke knowledge ($p< 0.001$). A significant shift from a passive to active stage of change for the overall study sample ($p<0.000$) was noted, but no significant difference between groups on the identified risk factors.
DiIorio, 2008.	247 participants. 41 years age. 65% male. African American 89%. Low SES. HIV/AIDs clinic in Atlanta, U.S.A. 12 months duration. Blinding details unavailable.	Adherence outcomes.	Usual care had adherence education.	MI sole component of the intervention. MI delivered individually, face-to-face for x5 sessions for 30-45 minutes. Phone delivery 2-5 sessions. Focus to build confidence, reduce ambivalence, and increase medication adherence.	Training consisted of 24 in class instructions with skills testing, regular meeting to cover issues and booster sessions. Fidelity included semi-structured MI script and sessions were audiotaped for fidelity.	Adherence outcomes analysed using MIXED procedure and Mixed model approach. MI group had higher mean percentage of prescribed doses taken on schedule. $P=0.005$ and prescribed doses taken $p=0.023$.

Reference author and year	Sample size, participants, duration & location	Intervention outcomes	Comparator intervention	MI intervention	Nurse interventionists, training in MI and MI fidelity	Health behaviour change results as reported by the author(s)
Dorr, 2008	3432 patients. 76 years. 65% female. Caucasian. Retired. Health care centre in Utah, U.S.A. 2-year duration. Blinding details unavailable.	Mortality and hospitalisation rates.	Control group had usual care.	Specialised information technology to manage chronically ill. MI part of this intervention. MI was not the focus of the intervention. There is no data relating to session length or delivery.	No training or fidelity stated.	Multivariate analysis, survival analysis performed using cox proportional hazards. IG had fewer deaths, Death p=0.01, diabetes p=0.03. ED visits were higher for control group =0.02. PQI had an equal ratio, but intervention with diabetes had a lower rate p=0.066. hospitalisation slightly less for intervention p=0.23, with diabetes p=0.01.
Cherpitel, 2009	446 patients. Few participant details available. Aged over 18 years. Set in Polish emergency room. Poland. 6 months duration. Blinding details unavailable.	Frequency of drinking, negative consequences associated with drinking, readiness to change, risk taking and injury.	Screening and assessment.	Received screening and assessment with brief intervention and referral. MI part of the brief intervention. 1-session face-to-face individually for 15-20 minutes. Focus on reducing risks of drinking and referral.	Training involved 1-day workshop with role-play. Supervision included on-site follow-ups and booster sessions when required. Fidelity consisted of observations with immediate feedback, audiotaped sessions and patient assessment tool.	Chi-squared and t-tests used. Subgroup analysis of covariance. IG decreased drinking days $p<0.05$, decreased negative consequence $p<0.05$, injuries $p<0.05$, t risk drinking $p<0.05$, # drinking days $p<0.05$, less # drinks per day $p<0.05$, less max drinks per day $p<0.05$.

Reference author and year	Sample size, participants, duration & location	Intervention outcomes	Comparator intervention	MI intervention	Nurse interventionists, training in MI and MI fidelity	Health behaviour change results as reported by the author(s)
Whittemore, 2009.	58 patients. 45 years mean age. 92% female. 45% Caucasian. Low SES. Primary care clinics in the U.S.A. 9 months duration. Blinding details unavailable.	Primary outcome: Weight loss and insulin resistance. Secondary: WC and lipid profiles.	Enhanced standard care and nutrition session.	Enhanced standard care and 6 nurse sessions included MI. 3-hours of face-to-face sessions. 1x phone for 1-hour. Focus on diet/exercise and lifestyle change.	Training consisted of 45-minute DVD and 2-hour workshop. Fidelity achieved by 2x monthly meetings and MI expert available for consult anytime.	Intent-to-treat analyses. IG had positive results on HDL-C p=0.03, greater weight loss % p=0.08, satisfied with programme p=0.048, and greater PA levels p=0.08.
Bentz, 2010	54 participants. 31 years. 72% male. Mostly employed. No ethnicity entered. French hospitals. No duration mentioned. Blinding details unavailable.	100% adherence to post-exposure prophylaxis (PEP).	Usual care.	Interactive counselling (based on MI) focused on adherence to PEP and HIV testing. 4 individual face-to-face sessions for 45 minutes.	MI part of 6-day training sessions. Feedback offered after every session and 2 supervised group sessions.	Intent-to-treat basis using chi-square test and student's t-test. 100% adherence to PEP higher in IG p=0.036 and more interventionists completed HIV testing p=0.023, p=0.056.
Hawkins, 2010	66 patients. 65 years. 86% female. 72% African American. 85% mid SES. Diabetes clinics. U.S.A. 6-months duration. Blinding details unavailable.	HbA1c, lipid panel, diabetes knowledge, diabetes self-efficacy.	Control group received 5-minute video-calls.	Weekly, then monthly video-calls focused on healthy-lifestyle education, included MI. Calls were 15 minutes per week for 3 months, and then 15 minutes per month.	MI training was a self-instructional course. Fidelity assured via recorded phone conversations which were then coded.	Independent sample t-tests, pearson chi-square and repeated measures analysis of variance used. Both groups declined in HbA1c, mean values differed: IG p=0.015 vs CG p=0.086. IG increased diabetes knowledge p=0.023, diabetes self-efficacy p=0.002.

Reference author and year	Sample size, participants, duration & location	Intervention outcomes	Comparator intervention	MI intervention	Nurse interventionists, training in MI and MI fidelity	Health behaviour change results as reported by the author(s)
Bredie, 2011.	112 outpatients. 51 years mean age. Mostly male. No other details. Cardiovascular outpatient secondary prevention. The Netherlands. 3 months duration. Blinding details unavailable.	Smoking cessation and reduced cigarettes.	Usual care with lifestyle inventory and feedback.	Usual care with lifestyle inventory and feedback and MI. Delivery x2 30-minute face-to-face and 2-4 10-minute phone calls. Focus on smoking cessation.	Only statement was that nurses were well trained. Nothing on fidelity.	Chi-squared test used to analyse intervention. The abstinence rate in the CG was 7%, and another 15% diminished the number of cigarettes, whereas 26% of IG quit smoking ($p<0.017$) and another 31% reduced smoking.
Cabezas, 2011.	2827 participants. 43 years mean age. 50% female/male. Spanish citizens. No income details. Primary care setting in Spain. 6 months duration and 2-year follow-up. Independent statistician blinded.	1-year continuous abstinence from smoking.	Usual care.	Recommendations from a Clinical Practice Guideline which included brief MI for smokers at various stages of quitting and stopping smoking. Delivery included 9x face-to-face sessions.	20-hour workshop with roleplay. Fidelity included randomly selected sessions to assess quality.	Intent-to-treat analyses. Abstinence rates at 2-year follow-up was 8.1% in IG and 5.8% in CG ($p=0.014$).
Halterman, 2011.	530 school students. 7 years age. 58% male. 63% African American. Low SES. 67 schools in the U.S.A. 3 months duration. Blinding details unavailable.	Mean number of asthma symptom-free days per 2 weeks during the peak winter season (November to February).	Usual care group encouraged to contact their doctor.	MI applied for increasing daily asthma meds and to reduce smoking. Delivered 1x in-home face-to-face session for 20-30 mins. 2x ph calls 10-15 minutes.	School nurses trained in MI. Audiotaped sessions and reviewed for fidelity.	Continuous variables analysed using linear mixed-effects model. IG had more symptom free days than CG. Nov $p=0.002$, Jan $p=0.005$ and Feb $=p<0.001$.

Reference author and year	Sample size, participants, duration & location	Intervention outcomes	Comparator intervention	MI intervention	Nurse interventionists, training in MI and MI fidelity	Health behaviour change results as reported by the author(s)
Drevenhorn, 2012.	153 patients. 57 years age. Mid SES. Swedish clinics. Sweden. 2 years duration. Blinding details unavailable.	Patient variables; BMI, WC, weight, LDL cholesterol, PA, WHR, BP, and perceived stress.	Control group received usual care.	Nurses were educated in patient centeredness, the SOC model, MI and application of guidelines for cardiovascular prevention, lifestyle factors and pharmacological treatment Mi focus on self-management of cardio risk factors. No other details stated	3-day training in Mi included video-recorded modelling sessions which were reviewed. No other details	Comparison performed using chi-squared tests and McNemar test. Decreased SBP, DBP and total cholesterol for both groups. Significant decrease in HR p=0.027, BMI p=0.019, weight p=0.0001, WC p=0.041, LDL-C p=0.0001, the WHTR p=0.024, and perceived stress p=0.001 only in IG. At 2 years, 52.6% of IG p= 0.13 reached the target of ≤ 140/90 mmHg in BP compared with 39.2% in the CG. Self-reported PA, significant p= 0.021 difference between the groups.

Reference author and year	Sample size, participants, duration & location	Intervention outcomes	Comparator intervention	MI intervention	Nurse interventionists, training in MI and MI fidelity	Health behaviour change results as reported by the author(s)
Fischer, 2012.	762 patients. 60% female. Mostly Latino. Low SES. Denver health centre. U.S.A. 20-month duration. Blinding details unavailable.	Primary: Proportion of patients with CVD and LDL. (low density lipoprotein) Secondary: Total hospital costs and admissions. Total number meeting other measures of BP, lipid, glycaemic guidelines	Control received usual care at the diabetes centre.	Lipid therapy and behaviour change using MI. 3x phone calls. No mention of duration.	Report mentioned nurses trained in MI methods. No fidelity stated.	Intent-to-treat analysis using multiple linear regression models. LDL increased in IG from 52% to 58.5% and CG decreased from 55.6% to 46.7% $p<0.01$. Hospital costs less for IG $6600 vs $9033 $p=0.03$, and admissions less $p=0.06$. No change for BP or glycaemic outcomes.
Olsen, 2012.	106 patients. 56 years mean age. 69% male. No other details. Tertiary sleep clinic, Australia. 12 months duration. Unable to mask participants or researchers.	Primary outcome was the difference between the groups in objective continuous positive airway pressure (CPAP) adherence.	Control group received 1x education session.	MI sole component of treatment. MI delivered in 3x face-to-face sessions for 20-30 minutes. Focus on treating sleep problems.	1x full-day training. Supervision throughout.	Intent-to-treat analyses. MI group had almost 50% better adherence of CPAP use compared to CG, $p=0.005$.

Reference author and year	Sample size, participants, duration & location	Intervention outcomes	Comparator intervention	MI intervention	Nurse interventionists, training in MI and MI fidelity	Health behaviour change results as reported by the author(s)
Steele, 2012.	526 nurses. 49 years mean age. 99% female. European American 94%. School nurses across the U.S.A. no duration entered. Blinding details unavailable. Difficulties in recruiting participants.	Knowledge, barriers to providing weight treatment, and intended practices.	Wait-list control.	MI techniques the focus with lowering barriers viewed as the key to successful conversations.	Child Health Matters web-based tutorial designed to improve school nurses' weight-related conversations with whānau. Approximately 4.7-hours training.	ANOVA analysis with paired sample t-test conducted. After training, the largest changes to nurse's communication were a reduction in skills-related barriers and societal factor barriers $p<0.001$, job related barriers reduced $p=0.001$, ability to assess PA increased $p=0.001$, and intention to assess PA increased $p=0.001$.
Thomas, 2012.	318 patients. 60 years age. 93% male. 58% Caucasian. Outpatient oncology clinics in the U.S.A. 12 weeks duration. Study sites blinded.	Pain intensity, relief, and interference. Attitudinal barriers, functional status, and QoL. (Cancer pain management).	Control group and educational group (EG).	MI group received educational video and received information on pain management. MI delivered via phone 4x sessions for 30 minutes. Focus on attitudinal barriers regarding cancer pain management.	Nurse trained by CBT psychologist and received monthly meetings to ensure fidelity.	Analyses of covariance and chi-squared tests used. Attitudinal barrier scores did not change among groups. MI had significant improvement in mean pain interference scores $p=0.01$, mental health scores were higher $p=0.035$, and no difference in pain intensity $p=0.08$.

Reference author and year	Sample size, participants, duration & location	Intervention outcomes	Comparator intervention	MI intervention	Nurse interventionists, training in MI and MI fidelity	Health behaviour change results as reported by the author(s)
Flemming, 2013.	41 patients. 70 years age. 59% male. No other details. Hospital in the U.S.A. 1-year duration. Blinding details unavailable.	LDL-C, cardio risks, BP, diet, PA. number of patients who met target.	Usual care received initial assessment and follow-up.	Individualised education, MI, and modification plan. MI individualised phone calls at 3 and 9-months, 4x meetings. No session duration entered. Focussed on modifiable risk factors.	No training or fidelity reported.	Chi-squared analysis used to compare groups. IG more likely to have met end targets 61% compared to 33% p=0.09, LDL-C decreased p=0.0083, cardio risks p=0.0033, SBP p=0.07, followed diet p=0.0070, and exercise programme p=0.0018.
Laws, 2013.	699 patients from 30 practices randomised. 58 years mean age. 62% female. Mid SES. General practices in N.S.W. Australia. 12 months duration. Blinding details unavailable.	Primary outcome: Referral rates and factors influencing programme attendance.	Control group.	Lifestyle assessment and MI counselling for referrals. Delivery consisted of 1 individual session and 6x group sessions for 1½-hours.	IG trained in MI for 3-hours with supervision. No fidelity checks.	Multi-level logistic regression analysis used. 197 patients referred in total. Referrals increased from 10% to 60% after the intervention. Smaller clinics and rural clinics in IG most likely to refer p=0.071.

Reference author and year	Sample size, participants, duration & location	Intervention outcomes	Comparator intervention	MI intervention	Nurse interventionists, training in MI and MI fidelity	Health behaviour change results as reported by the author(s)
Song, 2013.	40 participants. 67 years mean age. 64% male. Korean. No income details. University hospital in Korea. Unsure of duration. Blinding details unavailable.	Saint George's Respiratory Questionnaire. (SGRQ). Self-care adherence for COPD sufferers.	Usual care.	Self-care support system and MI. 3x face-to-face and 2x phone delivery. Focus on educating on how to manage medication, cope with dyspnoea and maintain functional levels.	6 hours training. No fidelity statements.	Two sample t-test used to compare study scores. SGRQ scores were higher in the IG. Symptom p=0.003, activity p=0.024, impact p=0.034, total score p=0.033, which translates to higher HRQoL. Self-care; medication adherence p=0.047 and exercise p=0.003.
Tse, 2013.	56 patients. Elderly retired people. 96% women. Cantonese speaking. Hong Kong elderly community centres. 8 weeks. Participants blinded.	Pain intensity, pain self-efficacy, anxiety, happiness, depression, mobility, and QoL.	Usual care.	MI the sole component of the intervention. MI delivered weekly for 30-minutes in group setting. Focus on pain management.	No mention of training or fidelity.	Independent samples t-tests and paired sample used for comparative analysis. Significant improvements noted in IG. Pain intensity p=0.002, pain self-efficacy p=0.022, anxiety p=0.008, lower depression p=0.015, better mobility p=0.004, increased happiness p=0.011. No differences on QoL.

Reference author and year	Sample size, participants, duration & location	Intervention outcomes	Comparator intervention	MI intervention	Nurse interventionists, training in MI and MI fidelity	Health behaviour change results as reported by the author(s)
Elliot-rudder, 2014.	330 patients. 100% women. Mostly 30-39 years. Low SES. Australian rural doctor's offices. 6 months. Blinding details unavailable.	Improved breast feeding.	Usual care.	Breastfeeding management, counselling skills, MI, reflective practice. Face-to-face contact, 3x individual sessions.	25-hour preparatory workshop with follow-up phone calls for feedback.	Intent-to-treat analysis with chi-squared tests used. Breast feeding improved in IG. Exclusive breastfeeding p=0.047, full breastfeeding p=0.04 improved at 4 months. No differences at 6 months.
Ma, 2014.	120 patients. 59 years age. 51% female. Lower SES. Chinese. Two community health centres in Guangzhou City. 24 weeks duration. Blinding details unavailable.	Treatment adherence, BP, laboratory indicators, QoL and self-efficacy.	Usual care received hypertension information.	MI sole component of intervention. MI delivered at home or at the centre. Individualised, face-to-face. 8x sessions for 30-40 minutes. Focus on hypertension care.	3-day training workshop. Fidelity in the form of audiotaped sessions with feedback.	Intent-to-treat analysis, independent sample t-tests used with paired samples t-tests analysis. MI enhanced treatment adherence and helped control BP. SBP, DBP greatly decreased $p<0.05$. adherence questionnaire demonstrated an increase $p<0.05$.

Reference author and year	Sample size, participants, duration & location	Intervention outcomes	Comparator intervention	MI intervention	Nurse interventionists, training in MI and MI fidelity	Health behaviour change results as reported by the author(s)
Young, 2014	101 patients. 60 years age. 57% male. Low SES. No ethnicity entered. Health centres in California, U.S.A. 9 months duration. Blinding details unavailable.	Self-efficacy, physical and mental health, satisfaction with diabetes care.	Usual care available at the health clinics.	Telehealth coaching using MI. 2-hour in-person session and then calls every fortnight (x5) for 30-minutes.	6-hours of training and practice prior to study. All calls recorded and edited for fidelity.	Student's t-test and regression methods used for analysis. Significantly higher self-efficacy scores in IG $p<0.05$ and trend toward higher satisfaction $p=0.71$.
Chien, 2015.	114 patients. 28/29 years mean age. 51% male. 62% in employment. Community psychiatric nursing service in Hong Kong. 6 months duration. Participants blinded.	Medication adherence, symptom severity, insight into treatment, hospitalisation rate, and functioning.	Usual psychiatric care.	Adherence therapy and usual care, included MI. 8x 2-hour sessions every two weeks. MI goal – adherence to medication.	2-full days training with supervision. 3 sessions were audiotaped and assessed for fidelity.	Intent-to-treat analyses. Repeated measures analysis of variance followed by Helmert's test showed IG greater improvements over CG insight into illness and/or treatment, psychosocial functioning, symptom severity, # of readmissions, and medication adherence $p=0.007$
Creber, 2015	67 patients. 62 years. 70% male. 54% AA. Low SES. Hospital setting in the U.S.A. 90 days. Blinding details unavailable. 35% attrition rate – explanation available.	Heart failure self-care. Physical heart failure symptoms. QoL.	Usual care consisted of a patient education booklet.	Home-based intervention. MI delivered face-to-face individually at home for the first visit. 3-4 phone calls thereafter. Focus on heart failure care.	No mention of training or fidelity.	Student's t-test used to assess for change. MI had increased heart failure self-care maintenance $p=0.026$, both improved QoL $p=0.036$, & self-care confidence $p=0.031$.

Reference author and year	Sample size, participants, duration & location	Intervention outcomes	Comparator intervention	MI intervention	Nurse interventionists, training in MI and MI fidelity	Health behaviour change results as reported by the author(s)
Pardavila-Belio, 2015.	255 participants. 20 years age. 61% female. University students. University in Spain. 6 months duration. Blinding details unavailable.	Primary outcome: smoking cessation. Secondary: smoking abstinence, reduction and quit attempts.	Control group received brief advice on smoking cessation.	MI and on-line self-help material. MI delivered in one 50-minute face-to-face session, with follow-up including e-mails and group therapy.	Study mentioned nurses trained in MI. No fidelity checks.	Intent-to-treat analysis with Pearson's and student's t-test used to compare results. MI intervention successful at smoking cessation p=0.003 and reduction p<0.001. Urine cotinine verified p=0.001 for IG.
Ream, 2015.	44 participants. 53 years mean age. 61% female. White British 68%. 45% unemployed. Chemo unit in British hospital. No duration specified. Blinding details unavailable.	Primary outcomes: fatigue intensity, fatigue distress, fatigue self-efficacy, anxiety, and depression.	Control group.	Phone MI. 3x phone calls. 1 and 2 were 40-minutes and 3 was 20-minutes. Focus on awareness and management of fatigue.	Training occurred over 10-weeks. Calls recorded for fidelity.	Outcome data analysed descriptively to depict changes. No p-values, used Effect sizes. Most in IG reduced fatigue distress (ES = 0.62). Reduced fatigue intensity (ES = 0.18), fatigue self-efficacy (ES = -0.34), and anxiety (ES = 0.31). Depression did not change.

Reference author and year	Sample size, participants, duration & location	Intervention outcomes	Comparator intervention	MI intervention	Nurse interventionists, training in MI and MI fidelity	Health behaviour change results as reported by the author(s)
Sanci, 2015	901 patients, 132 clinicians (mostly nurses). Nurses aged 25-43, 45-54 (50%). Patients; 18-24 years, 71% female. 42 general practices in Australia. 12 months duration. Blinding details unavailable.	Primary outcome: patient report of clinician detection of at least one health behaviour risk. Secondary: change in one or more of health risk behaviour.	Usual care consistent with the allotted general practice.	The intervention involved health risk screening, use of a screening tool and MI; engaging youth; provision of feedback to clinicians of patients' risk data; and two practice visits to support new screening and referral resources.	Training consisted of 3 sessions, which comprised 9 hours of MI. 50% of nurses attended. Fidelity not mentioned.	Intent-to-treat approach used. IG had improved detection of health risk behaviours, with greater discussion of health risk behaviours. Illicit drug, p=0.11, less risk for S.T.I, p=0.01, tobacco use, p=0.40, alcohol use, p=0.76, road risks, p=0.34, emotional distress, p=0.25, abuse in relationships, p=0.45, unplanned pregnancy, p=0.01.
Hosseini, 2016.	56 participants. 31 years mean age. 53% male. 84% unemployed. Iranian. Hospitals in Iran. 2 months duration. Blinding details unavailable.	QoL measures.	Control group received health care services.	MI alone. Delivered via 5x sessions face-to-face in groups. Focus on improving QoL.	Nurses completed intensive training in MI. No fidelity measures.	Independent t-test, chi-squared test and paired t-test used for analyses. IG demonstrated significant increases in QoL scores p<0.001, whereas CG had decreases in their scores p<0.001.

Reference author and year	Sample size, participants, duration & location	Intervention outcomes	Comparator intervention	MI intervention	Nurse interventionists, training in MI and MI fidelity	Health behaviour change results as reported by the author(s)
Lin, 2016	328 patients. 64 years. 100% women. Mostly retired. Taiwanese. Community health centre in Taiwan. 12 weeks duration. Blinding details unavailable.	Outcome measures included weekly PA amount, MetS (metabolic syndrome), and MetS risks, as well as the average number of MetS risks	Brief group received a single brief counselling session with a brochure. The usual care group received standard care.	Individualised phone delivered lifestyle modification programme with MI. Phone delivery, 1 call a week for 15-20 minutes.	Statement on the nurse/researcher being well trained (no specifics). No fidelity checks.	Intent-to-treat analysis performed using international PA questionnaire and SPSS version 16.0. All results deemed significant. IG increased PA p=0.01, reduced diagnosed MetS p<0.001, and fewer MetS risks p=0.02.
Riegel, 2016.	100 patients. 60 years mean age. 67% male. 55% African American. Mid SES. Research office U.S.A. 90 days duration. Blinding details unavailable.	Hospital readmissions.	Control group received educational material.	MI alone. Delivered 1x home visit and 3-4 phone calls. Focus on self-care.	1-day MI training Sessions audiotaped and assessed for fidelity.	Intent-to-treat analyse. Significantly reduced multi-morbidity readmissions. Number readmitted for conditions unrelated to heart failure was lower for IG 7.1% vs 30% in CG, p=0.003.

Reference author and year	Sample size, participants, duration & location	Intervention outcomes	Comparator intervention	MI intervention	Nurse interventionists, training in MI and MI fidelity	Health behaviour change results as reported by the author(s)
Chahal, 2017	32 adolescents 13-14 years, 62% male no ethnicity, income level or BMI specified. Lipid clinic in Southern Ontario, Canada. 6-months duration. Blinding details unavailable. 100% participant completion rate.	Change in fasting lipid values, diet and exercise, BMI, waist measurements, psychosocial well-being and QoL.	MI alone or with parental dyad.	MI focus on lifestyle behaviours that affected the health of the adolescents. 4 individual face-to-face sessions for 30-45-minutes (either alone or dyad). 4 phone sessions for 30-45-minutes.	Nurses trained in advanced MI in two 3-day workshops, with regular practice sessions. Fidelity: sessions with adolescents recorded and coded using MITI coding system. High scores were achieved.	Changes between groups assessed using repeated measures methodology. There were no significant differences between groups in physical, laboratory, lifestyle or psychosocial measures, except for a reduction in dietary fats/sugars ($p = 0.02$) and in screen time ($p = 0.02$) in the alone group. When both groups were combined, significant reductions at 6 months were noted for BMI ($p < 0.001$), WC($p < 0.001$), total cholesterol ($p < 0.001$), LDL cholesterol ($p < 0.001$), triglycerides ($p = 0.01$), non–high-density lipoprotein cholesterol ($p < 0.001$), fasting insulin ($p = 0.01$), and homeostatic model ($p = 0.02$). Reduced screen time and

						increased fruit and vegetable intake were also noted for both groups combined. These changes were also reflected in self-efficacy (p = 0.004), self-esteem (p = 0.03), and improvement in QoL measures.

Table 3: Nurses' Use of Motivational Interviewing with no Significant Differences

Reference author and year	Sample size, participants, duration & location	Intervention outcomes	Comparator intervention	MI intervention	Nurse interventionists, training in MI and MI fidelity	Health behaviour change results as reported by the author(s)
Ershoff, 1999	390 women. 29years old. 63% Caucasian. No income details. Southern California clinic. Duration not specified. Blinding details unavailable.	Primary: Prenatal smoking cessation	1: self -help booklet. 2: self -help booklet and phone-based cessation programme.	Booklet, phone service and phone MI. Focus on smoking cessation and the harms of smoking. 4-6 calls lasting 10-15 minutes.	6 hours of training, 2 hours small group meeting, 85-page manual and 8 hours of self -study. Semi-structured checklist supplied. No fidelity mentioned.	Chi-squared and analysis of variance tests. No significant differences between groups. 19.9% quit p=.57
Suplee, 2005	62 participants. 100% women. 23 years age. 81% African American. No income details. U.S hospital. 8 weeks duration. Blinding details unavailable.	Primary outcome: Relapse to smoking	No intervention	Brief counselling using empowerment techniques, MI, identification of stressors and individual coping strategies, and educational materials. 1 per person session, individualised, face-to-face, lasting 10-20 minutes. Focus on the importance of the problem, confidence to change.	Nothing on training or fidelity.	Chi-squared analyses showed no group differences. 52% of women relapsed to smoking. P=0.431

Reference author and year	Sample size, participants, duration & location	Intervention outcomes	Comparator intervention	MI intervention	Nurse interventionists, training in MI and MI fidelity	Health behaviour change results as reported by the author(s)
Goodman. 2007	188 patients. 80% men. 64 years of age. Ethnicity and SES not mentioned. Tertiary care clinic. U.K. 6 months duration. Blinding details unavailable.	Primary: Anxiety, blood pressure, cholesterol, length of stay, and BMI. Secondary: Costs of intervention	Standard care with preparation for surgery	Lifestyle counselling and preparation for surgery. Mi delivered monthly via phone calls 9 in total. No duration mentioned	Training consisted of a series of workshops prior to intervention and during. No supervision or fidelity stated.	Intention-to-treat analysis. Both groups BP and total cholesterol improved BP; both p=0.01; total cholesterol Control = p=0.02, Intervention − p=0.03). However, no significant differences between the groups. Cost minimisation analysis showed total costs were less in the intervention group due to fewer admissions (total costs £10,754 (3746) v £13,047 (5835) p=0.002).
Dale, 2008	231 patients. 60 years age. 58% male. 94% white British. No income details. Central England general practices. 6 months duration. Blinding details unavailable.	Primary: self-efficacy score. Secondary: HbA1c	Telecare support delivered by peer supporters (with MI) or routine care	Routine care with telecare support with MI delivered by specialist nurses. Phone delivered for 6 sessions. No time reported.	No training mentioned. Fidelity consisted of, telephone record sheets used to monitor content. 6-month review meeting.	Linear mixed effects model for repeated measures and chi-squared tests used. No differences between groups. Self-efficacy p=0.68 and HbA1c p=0.87

Reference author and year	Sample size, participants, duration & location	Intervention outcomes	Comparator intervention	MI intervention	Nurse interventionists, training in MI and MI fidelity	Health behaviour change results as reported by the author(s)
Koelewijn-van Loon, 2009	615 patients. 55% female. 57 years age. Middle income. Netherlands nurse-led clinics. 1-year duration. Nurses not blinded but put in processes to reduce patient bias.	Primary outcomes: smoking cessation/reduction, reduced fat intake, increased fruit and vegetable consumption, increased physical activity, and reduced alcohol consumption.	Control group received minimal nurse intervention	The intervention consisted of nurse-led cardiovascular risk management, incl risk assessment, risk communication, decision aid and adapted MI sessions incl 2 face-to-face, individual 15-20 min sessions and 1 ph session for 10 mins.	2-day training. Fidelity included audiotaped sessions.	Intention-to-treat analyses. No significant differences on diet, exercise or smoking. Intervention group had lower intake of fat p=0.034, greater vegetable intake p=0.045. both groups improved on cardiovascular risks.
Davis, 2010	218 participants. 55% male. 38 years age. 76% Caucasian. American laboratory. 6 months duration. Blinding details unavailable. High attrition rate.	Primary: reduce or quit smoking	Prescriptive advice	Brief MI. Phone intervention for 15 minutes duration. 1 session	No training details. Fidelity included audiotaped phone calls that were coded, and weekly meetings occurred with nurses.	t-tests and chi-squared analyses demonstrated no superior group differences. Women in the MI gp benefitted most with reduction or quitting p=0.001, and minority gps improved cessation rates.
Cossette. 2012	40 patients. 60% men. 57 years average. No ethnicity or SES. Canadian hospital. 6 mo duration. Blinding details unavailable. High attrition rate.	Primary: smoking cessation. Secondary: cardiac risk factors, diet and exercise.	Usual care. Referral to community centre, online help, phone helpline, and access to smoking cessation centre.	Telephone intervention. Stages of change guide used, MI part of a script. Phone calls averaged 7.9-12.2 minutes. 6 individual phone sessions in total.	No training, supervision or fidelity mentioned	Intention-to-treat analysis. Both had similar cessation rates p=0.72. No differences on diet p=0.99 and slight differences on exercise p=0.26

Reference author and year	Sample size, participants, duration & location	Intervention outcomes	Comparator intervention	MI intervention	Nurse interventionists, training in MI and MI fidelity	Health behaviour change results as reported by the author(s)
Lakerveld, 2013	622 patients. 60% female. 44 years age. Dutch ethnicity. 38% below average income. Netherlands General Practices. 12 months duration. Blinding details unavailable.	Primary outcomes: Physical activity and sedentary time	Usual care with health brochures	MI and problem-solving treatment aimed at adoption of healthy lifestyles. MI delivered in 12 sessions, face-to-face individually, focussed on smoking, physical activity or diet.	12 hours of training. Use of treatment manual, 1 hour of coaching and feedback. Fidelity ensured with regular supervision and audio recordings.	Intent-to-treat analyse. Both reduced sedentary time by 19 minutes in the usual care group and 27 minutes in the intervention. No other differences.
MacKenzie, 2013	56 patients. 75% male. 65 years age. Canadian. No income levels identified. Canadian urban stroke prevention clinics. 6 months duration. Blinding details unavailable. 100% participant completion rate.	Primary outcome: Lowered BP. Secondary outcomes: Confidence, adherence, and compliance to stroke prevention medication.	Usual care: Stroke assessment, medication, medication counselling, home BP management system and access to stroke clinic.	MI and stroke assessment, meds, meds counselling, home BP management system and use of stroke clinic. MI delivered monthly over the ph. 6 sessions to promote risk factor reduction. No time duration listed.	No training or fidelity reported	Chi-squared test and t-test analyses. Both groups improved BP p=0.46 and met BPG targets p=0.11. No other differences: Self efficacy p=0.78, adherence p=0.026 and compliance p=0.20.
Holmen, 2014	151 patients. 69% male. 57 years age. No income or ethnicity listed. Norwegian study clinics and public hospital clinics. 1-year duration. Blinding details unavailable.	Primary outcome: Improved HbA1c levels. Secondary: Self-management, and HRQoL.	First group; usual care. Second group; mobile phone self-management system.	Third group; mobile phone self-management system with MI used as a booster at the beginning of the trial. Focus to enhance health behaviour change. 5 phone sessions for 20 mins duration	No training mentioned. Fidelity included supervision by a clinical psychologist.	Univariate methods and multivariate linear and logistic regression. No differences. All decreased HbA1c levels p=0.97. Self-management improved in MI p=0.04.HRQoL did not differ in groups.

Reference author and year	Sample size, participants, duration & location	Intervention outcomes	Comparator intervention	MI intervention	Nurse interventionists, training in MI and MI fidelity	Health behaviour change results as reported by the author(s)
Leiva, 2014	221 patients. 56% male. 65 years age. Middle-income. Spanish origin. Primary care centres in Spain. 12 months duration. Allocation concealment applied.	Primary: systolic BP measures. Secondary: diastolic BP measures	Usual care	Nurse-led MI with pill reminders, family support, BP self-recording, and simplification of the dosing regimen by a pharmacist. Mi delivered face-to-face, 3 sessions lasting 25 minutes.	Nothing on training or fidelity.	Intent to treat analyses revealed no group differences in systolic BP measures p=0.294 or diastolic p=0.098
Pladevall, 2014	1692 patients. 50% male/female. 64 years age. 51% Caucasian. U.S (Michigan and Detroit hospitals). 18 months duration.	Primary outcomes: Improve diabetes and lipid control with medication adherence.	Usual care; adherence information discussed with patients	MI and adherence information. Delivered face-to-face and phone. 6 sessions. No time duration reported	Training and fidelity of nurses and pharmacists consisted of simulated sessions that were recorded and rated until pass rates achieved.	Intent-to-treat analyses. No significant differences. A1C medication adherence p=0.285 and LDL-C levels p=0.856
Doring, 2016	1355 whānau and 1369 infants. 54% male infants. 9 months – 4 years age. 94% Swedish born. Child health care centres in Sweden. 39 months. Blinding details unavailable. Attrition rate of 16.1%.	Primary outcomes: BMI, weight prevalence and WC by the age of 4. Secondary outcomes: food and activity habits, and mother's anthropometric measurements.	Control group received usual care.	SCT and learning theory-based intervention. MI and CBT applied for health promotion. Delivery; 1 group session, 6 face-to-face individual and 2-phone. Focus on healthy food habits and PA.	Training included a 5-day course on MI, CBT, nutrition and PA. MI was assessed with recorded sessions with feedback.	Intent-to-treat analyses. No differences between infants' weight prevalence p=0.80, BMI p=0.26, WC p=0.07, percentage high weight p=0.78, PA p=0.81, sedentary behaviour p=0.87. No differences between mothers' BMI p=0.67, WC p=0.30, or prevalence of high weight p=0.62.

Table 4: Nurses' use of MI with Mixed Results

Reference author and year	Sample size, participants, duration & location	Intervention outcomes	Comparator intervention	MI intervention	Nurse interventionists, training in MI and MI fidelity	Health behaviour change results as reported by the author(s)
Dilorio, 2003	20 patients. 53% male. 87% African American. 42 years age. High school educated. HIV clinics in the U.S.A. 8 weeks. Blinding details unavailable.	Adherence to antiretroviral medications.	Control condition received usual care.	Intervention based on MI. Focus on adherence. 2 individual face-to-face sessions and 2 phone sessions. Nothing on duration.	Training consisted of 25 hours in workshop. Fidelity included supervised practice, video or audio taped sessions with feedback.	Independent samples t-tests had no great statistical differences. Overall the IG had higher self-reported adherence scores and missed fewer doses. Statistical significance reached only for one measure of adherence p=0.024.
Green, 2007.	200 patients. 58% male. 67 years age. Ethnicity/income not stated. Stroke prevention clinic in Canada. 3 months duration. Data entry personnel blinded.	Primary outcome: stoke knowledge acquisition and retention. Secondary outcome: risk factor modification	Standard care involved brief discussion and education.	Education counselling interview (included MI techniques). 1 session face-to-face individualised for 15-20 minutes.	No training or fidelity stated.	Intent-to-treat analyses. Significant difference between groups in stroke knowledge p<0.001, and no differences on identified risk factors.
DiIorio, 2008	22 patients. 68% male. 43 years age. 45% white and black. Low SES. Epilepsy clinics in the U.S.A. Duration 3 months. Blinding details unavailable.	Medication adherence.	Control group received usual care	MI and SCT phone self-management system. Focus on medication management, adherence and other self-management behaviours.1 f-t-f sessions and 2-5 phone sessions.	Training for 25 hours. Fidelity included supervision, video or audio sessions reviewed with feedback.	Independent t-tests. Improved adherence for some. Epilepsy knowledge and social aspects improved in IG p=0.077. meds outcome expectancy improved p=0.004. Info management CG p=0.073.

Reference author and year	Sample size, participants, duration & location	Intervention outcomes	Comparator intervention	MI intervention	Nurse interventionists, training in MI and MI fidelity	Health behaviour change results as reported by the author(s)
Cherpitel, 2009	446 patients. 85% male aged over 30 years. No ethnicity or income listed. Polish emergency department. Duration 3 months. Blinding details unavailable.	Decrease in at risk drinking.	Screened only and assessed.	Integrated elements of MI into screening and assessment of at-risk drinkers. Sessions were face-to-face, individualised for 15-20 minutes. Focus on risks of drinking.	2-day training with booster sessions (not specifically on MI). Fidelity to treatment included observations with feedback and audiotaped sessions with feedback.	Analysis of covariance, paired t-tests and chi-squared analyses. Both had a decrease at-risk drinking, drinking days, amount of drinks, maximum drinks, & negative consequences. P<.05.
Heinrich, 2010	584 patients. 55% male. 59 years age. Low education level. General practices in the Netherlands. 2 years duration. Blinding details unavailable.	Outcome measures: self-management behaviours around diet and exercise, BMI, BP HbA1c, LDL and HDL cholesterol, and triglycerides.	Usual care was a nurse consultation.	MI designed for diabetes care. 1 session face-to-face individualised consultation for 20 minutes.	Training consisted of 2 training sessions. Fidelity; two follow-up meetings, written feedback and 3 direct feedback sessions	Multilevel analyses conducted. Some improvements occurred. MI had reduced fat intake p=0.04, better PA scores p<0.05, smoking p<0.05, CHLOC p=0.00, HDL-C p=0.01.
Ismail, 2010	1659 patients. 60% female, 80% white, 36 years age, from middle income. Diabetes clinics in London and Manchester. Duration 12 months. Blinding details unavailable.	Primary outcome was HbA1c. Secondary outcomes were associated costs, QoL, and EQ-5D.	Usual care with 3 appointments at the clinics. (i)MET and CBT compared to usual care (ii) MET compared to usual care. (iii) MET and CBT compared to MET	MI and CBT combined to focus on improving glycaemic control. All MET sessions were individualised, face-to-face (4 in total) and there were 8 CBT sessions.	Training workshop and self-directed learning. Fidelity included audio-visual feedback, weekly supervision.	Intent-to-treat covariance of analysis used. MET and CBT combined most effective reducing HbA1c (0.45% lower) p=0.008 (compared to UC) p=0.11 (compared to MET alone). No differences on depression or QoL.

Reference author and year	Sample size, participants, duration & location	Intervention outcomes	Comparator intervention	MI intervention	Nurse interventionists, training in MI and MI fidelity	Health behaviour change results as reported by the author(s)
Groeneveld, 2011	816 participants. 100% male. 47 years old. 70% white collar workers. Construction companies in the Netherlands. 6 months duration. Investigator blinded.	Primary outcomes: improved diet, increased PA, and smoking reduction/cessation.	Usual care.	MI delivered by occupational physician or occupational nurse. 3 face-to-face (45-60 minutes) and 4-phone (15-20 minutes). Focus on diet, exercise or smoking.	No training or fidelity mentioned.	Linear and logistic regression analyses. Significant differences in MI group for snacking $p<0.05$ and fruit consumption $p<0.05$, and smoking $p<0.05$, but no differences on PA.
Williams, 2012	80 patients. 56% male. 67 years age. Retired. 17% Italian. Nephrology and diabetes outpatient clinic in Australia. 2 months duration. Personnel collecting and assessing data blinded.	Improved BP control and medication adherence.	Usual care.	MI with medical review, self-monitoring, and DVD. Focus on supporting BP control and optimal medication self-management. MI delivered over the phone (6 sessions). No mention of time.	Nurse trained in MI with a checklist and script supplied to ensure fidelity.	Intent-to-treat analyses. Overall higher reduction in both systolic and diastolic BP. The mean systolic BP improved in MI group $p=0.026$ and medication adherence $p=0.162$.
Yonkers, 2012	168 participants. 100% women. 15-44 years age. No ethnicity/income listed. 2 hospital-based reproductive health clinics in New Haven and Bridgeport, U.S.A. 6 mo duration. Blinding details unavailable.	Primary outcome was % of days in the prior 28 days in which alcohol and/or drugs were used immediately before and 3 months post-birth.	Usual are consisted of brief advice. A manual on the associated risks of substance use.	MI and CBT combined, focus on reduction of substance use during pregnancy. 1 session face-to-face, individualised for 30 minutes.	Training consisted of 2-day workshop. Fidelity ensured with supervision and audiotaped sessions, with feedback.	Intent-to-treat analyses demonstrated no significant differences between groups, both groups reduced substance use. There was a trend for lower risk of pre-term babies in the IG $p=0.08$.

Reference author and year	Sample size, participants, duration & location	Intervention outcomes	Comparator intervention	MI intervention	Nurse interventionists, training in MI and MI fidelity	Health behaviour change results as reported by the author(s)
Chair, 2013	146 patients. 70% male. 66 years old. Low-mid SES. Cardiac rehabilitation centre in Hong Kong. 12 months duration. Data collectors blinded.	Clinical and psychological outcomes and HRQoL.	Usual care consisted of exercise and education.	MI with exercise and education. 10 sessions, face-to-face, for 30-45 minutes.	Training mentioned, with no specifics. Fidelity included supervision of 3 sessions and audiotaped sessions.	Independent t-tests and chi-squared analyses. Mixed results. MI group had higher HRQoL scores, p=0.044, emotional effect, p=0.019, bodily pain improved, p=0.044, emotional problems improved, p=0.019. No other differences.
Gabbay, 2013	545 patients. 58% women. 58 years age. 47% white and low-mid income. 12 primary care clinics in central Pennsylvania. 2 years duration. Blinding details unavailable.	Improved outcomes in high-risk type 2 diabetes.	Routine care.	MI with routine care. 4 face-to-face visits (average). No duration mentioned.	3 nurses trained for 80 hours using curriculum, role play, role modelling. Fidelity ensured by audiotaping sessions monthly using BECCI feedback and frequent supervision.	t-tests and chi-squared tests used. Mixed results. MI group had improved SBP $p<0.05$. Neuropathy scores $p<0.001$, retinopathy scores $p<0.001$, nephropathy scores p=0.017 and depression scores p=0.02. Both improved in HbA1c, LDL-C, diastolic BP.

Reference author and year	Sample size, participants, duration & location	Intervention outcomes	Comparator intervention	MI intervention	Nurse interventionists, training in MI and MI fidelity	Health behaviour change results as reported by the author(s)
Mertens, 2014	403 patients. 52% female. 51% mixed ethnicity. 74% unemployed. 21 years age. Primary health care clinic in South Africa. 3 months duration. Single-blinded research interviews during follow-up.	Primary outcome was reduced alcohol and drug use.	Usual care and referral list.	MI and referral list. Focus on risks associated with drugs and alcohol use. Face-to-face session for 10 minutes.	Training was for 3 days. Fidelity involved regular supervision with feedback. Sessions audiotaped with BECCI coding system applied.	Chi-squared tests and logistic regression analyses used. Alcohol consumption reduced for MI group. Alcohol assist score p=0.0293, more so for women p=0.0752, cannabis use reduced p=0.1119, methamphetamine use reduced p=0.2264. no other differences.

QoL, quality of life; MI, Motivational Interviewing; BMI, Body Mass Index; PA, physical activity; MITI, Motivational Interviewing Treatment Integrity instrument; HDL-C, high density lipoprotein cholesterol; HRQoL, health related quality of life; LDL-C, low density lipoprotein cholesterol; RD, registered dietitian; RN, registered nurse; SES, socio-economic-standing; EQ-5D, European Quality of Life-5 Dimensions; HbA1c, glycated or glycosylated haemoglobin; BP, blood pressure; SBP, systolic blood pressure; DBP, diastolic blood pressure; CBT, cognitive behavioural therapy; MET, motivational enhancement therapy; U.K; United Kingdom; U.S.A, United Sates of America; SCT, social cognitive theory; HIV, human immunodeficiency virus; BECCI, The Behaviour Change Counselling Index; DVD, digital video disc; CHLOC, chance health outcome; WC, waist circumference; IG, intervention group; CG, control group; WHR, waist-hip ratio; UC, usual care; IG, intervention group. AA, African American; Ph, phone; Incl, includes.

Appendix A

Changes Required for Consent and Information Form

Dear Amanda,

Thank you for your sending through your low risk application to the Human Ethics Committee. When reviewing your application the Committee raised the following points which they would be pleased to receive your feedback on to assist them when considering your application further:

- **Questionnaire** – please can you confirm whether the questionnaire will be anonymous or confidential? It is not clear if respondents' email addresses and IP address information will be deleted before you receive the questionnaires.
  - Please could you confirm the completed questionnaires will be sent directly to you upon submission?
  - Please provide an option in question 1, Gender, for people to select "Other".
- **Interviews** – given the number of topics to be covered in the interview, it is likely these will take up to an hour or more. Please can you amend your **information sheet** accordingly.
- **Information sheet -** rather than saying "there will be low risks associated with confidentiality", please tell your participants what measures will be used to ensure confidentiality.
  - Please state in your information sheet who specifically will have access to the data.
- Similarly, in the **consent form** name who, apart from yourself, the transcriber, and your supervisor, will access the data.
  - Consent form – you note that Pegasus Health will not be identified. Question 31 of the application form seems to provide a different response. Please could you clarify?
- Please can you send through to the HEC the feedback from the Ngāi Tahu consultation process.
- Please can you provide evidence of support from Pegasus Health to conduct this research – email correspondence will suffice.

The Chair would be grateful if you could address the above issues in writing, **detailing how you have addressed each point of the Committee's feedback**, and amending your application and/or supporting documents accordingly; please return them to me, via email, for further consideration and approval.

Appendix B

Human Ethics Committee Approval Letter.

HUMAN ETHICS COMMITTEE

Secretary, Rebecca
Robinson Telephone: +64
03 369 4588, Extn 94588
Email: human-ethics@canterbury.ac.nz

Ref: HEC 2017/15/LR

6 June 2017

Amanda Jane Jarden
College of Education, Health and Human
Development UNIVERSITY OF CANTERBURY

Dear Amanda

Thank you for submitting your low risk application to the Human Ethics Committee for the research proposal titled "Before School Check Nurses' Experiences with Motivational Interviewing During the Weight-related Referral Process. An Interpretive Phenomenological Study".

I am pleased to advise that this application has been reviewed and approved.

Please note that this approval is subject to the incorporation of the amendments you have provided in your emails of 1st and 29th May, **and the following**:

Please send through to the HEC the letter from Pegasus Health confirming their support for the research and consent to being named in the thesis and any subsequent publications, once this has been received.

With best wishes for your project.

Yours sincerely

R. Robinson
pp.

Associate Professor Jane Maidment
Chair, Human Ethics Committee

Appendix C

Approval Letter from Pegasus Health.

Pegasus
partners in health
kia ataahua ki te tangata
Pegasus House
401 Madras Street
P.O. Box 741, Christchurch 8140
P: (03) 379 1739 I F: (03) 365 5977
www.pegasus.health.nz
/pegasus.health.nz

Research Audit Evaluation

25 July
2017
Amanda
Jarden

College of Education, Health and Human
Development University of Canterbury

Private Bag 4800

CHRISTCHURCH 8140

Dear Amanda

Thank you for your application for Pegasus Health research participation/support ref: RAEOOSO.

We are pleased to advise your request has been approved

Please note privacy issues mean we don't supply individual contact details/emails for Pegasus members but we are happy to facilitate contact by way of distributing a one page flyer/invitation by 'Pegasus Post'.

We will need for our records copies of:

- The final study protocol when completed.
- The ethics approval letter (and approvals for any extensions)
- Copies of any other subsequent correspondence with the ethics committee including annual reports.
- A final report on the study
- A copy of any publications resulting from the research. Please note there is an expectation of acknowledgement of Pegasus Health organisational and/or specific staff support in any publications or reports where this is appropriate.

The following person is the designated contact person within the organization: Natasha Capon, Marketing & Communications Co-ordinator natasha.caoon@oegasus.org.nz.

We wish you well with your research. Please contact the committee if we can offer any further advice that would assist you.

Yours sincerely

Prof. Derelie Mangin

Appendix D

Correspondence with Pegasus Health

(This correspondence was in response to initial checking of the survey by Pegasus Health and these are part of the amendments required prior to issuing the on-line survey. This was dated 31/08/2017)

Hi Mandy

Lovely to meet you last week and thank you for sending through the amended questionnaire. I just have a couple of suggestions around wording in the introduction (see highlighted areas below) and Q3 in the survey.

Q3. How long have you been in your current role? ~~as a practice nurse?~~

Let me know if you are happy to make these changes and I will initiate the communications approval process here at Pegasus so we can send out the survey link and introduction within the next week.

Kind regards,
Leigh

Leigh Aston | Coordination Team Leader
Pegasus Health (Charitable) Ltd

Appendix E

Information form for survey and interview participants.

Department: College of Education, Health and Human Development
Telephone: 027 3688656

Email: ajj43@uclive.ac.nz

26/07/2017

Before School Check nurses' experiences with motivational interviewing during the weight-related referral process. An interpretive phenomenological study.

Information Sheet for Before School Check nurses.

Kia ora my name is Amanda Jarden and I am a Master of Health Sciences student at the University of Canterbury. I am in the process of beginning my thesis research which follows on from completing post-graduate studies focussing on health behaviour change.

The research to be conducted will examine your experience during the referral process of high weight children identified in the Before School Check programme. The aim is to discover the strategies you employ, the barriers you may encounter, and any further support you may need. Your experience of this process is what this research is concerned about. It provides you with an opportunity to voice your thoughts on this issue.

If you choose to take part in this study, your involvement in this project will be to complete an on-line anonymous questionnaire that examines your experiences of the referral process. The questionnaire should take between 5 and 10 minutes to complete.

As a follow-up to this investigation, you will be invited to take part in recorded interviews. The confidential interviews are intended to gain a deeper insight into your involvement in the referral process of high weight children. It is expected to take between 30 and 60 minutes for this interview.

The project is being carried out as a requirement of the Master of Health Sciences degree by Amanda Jarden under the supervision of Dr Mark Wallace-Bell, who can be contacted at mark.wallace-bell@canterbury.ac.nz. He will be pleased to discuss any concerns you may have about participation in the project.

This project has been reviewed and approved by the University of Canterbury Human Ethics Committee, and participants should address any complaints to The Chair, Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch (human-ethics@canterbury.ac.nz).
If you agree to participate in the study, you are asked to complete the consent form and return via email to ajj43@uclive.ac.nz

Appendix F

Survey and interview consent form

Before School Check nurses' experiences with motivational interviewing during the weight-related referral process. An interpretive phenomenological study.

□ I have been given a full explanation of this project and have had the opportunity to ask questions.
□ I understand what is required of me if I agree to take part in the research.
□ I understand that participation is voluntary, and I may withdraw at any time without penalty. Withdrawal of participation will also include the withdrawal of any information I have provided should this remain practically achievable.
□ I understand that any information or opinions I provide will be kept confidential to the researcher and the University of Canterbury supervisors, Dr Mark Wallace-Bell and Dr Eileen Britt and that any published or reported results will not identify the participants. I understand that a thesis is a public document and will be available through the UC Library.
□ I understand that all data collected for the study will be kept in locked and secure facilities and/or in password protected electronic form and will be destroyed after five years.
□ I understand the risks associated with taking part and how they will be managed.
□ I understand that I can contact the researcher Amanda Jarden, supervisor Dr Mark Wallace-Bell, or Human Ethics committee (contact details on the information email) if I have any queries or concerns.
□ I understand I can obtain a summary of the results of the project if I wish.
□ By checking the box below, I agree to participate in this research project.

- Yes, I agree
- No, I do not wish to participate

Appendix G

Survey questions

Before School Check nurses' experiences with motivational interviewing during the weight-related referral process. An interpretive phenomenological study.

Circle or write the answer most applicable to you.

Personal details

1. What is your gender? Please select either;

   Female Male Gender diverse

2. What is your age? Please select the range applicable

   - 18 – 24
   - 25 – 34
   - 35 – 44
   - 45 – 54
   - 55 – 64
   - 65 – 74
   - 75 years or older

Professional Expertise

3. How long have you been in your role as a practice nurse? Please indicate

   - Under 1 year
   - 1 – 6 years
   - 6 – 10 years
   - 11 – 15 years
   - 16 – 20 years
   - 20+ years

4. Which Before School Check (B4SC) service provider do you operate under?

   - Public Health nurse
   - General Practice nurse
   - Mobile rural service
   - Mobile urban service

5. During the B4SC, and specifically when dealing with children who present at the 91st BMI centile and above, how easy do you find it to;

    - Identify children who are above a healthy weight
    - Address high weight with families/ whānau
    - Refer onto lifestyle services for children above a healthy weight

Motivational interviewing.

6. Have you had any training in motivational interviewing (MI) (please tick)

    - Yes
    - Maybe
    - No (go to question 10)

7. What kind of training? (choose the option(s) most applicable)

    - 1-2-hour presentation
    - ½ day workshop
    - 1-day workshop
    - On-line learning tool
    - British Medical Journal Learning website
    - Healthy conversations
    - Motivational conversations
    - ARA training programme
    - Other (please write your answer)

8. When did you acquire this training?

    - 0 – 6 months ago
    - 6 months – 3 years ago
    - 3 – 6 years ago
    - Over 6 years ago

9. In regard to learning motivational interviewing, do you feel the training you received was adequate?

    - Extremely adequate
    - Adequate
    - Neither adequate nor inadequate
    - Adequate
    - Inadequate

10. Other than motivational interviewing, have you any experience/training in other counselling methods for changing health behaviour? (Please circle)

    Yes (please write the training) No (go to the next question)

11. MI can be a useful tool for discussing healthy weight in children with their families/ whānau I feel uneasy communicating about weight issues with whanau of above healthy weight children, how confidently do you think you can use it for this purpose?

- Extremely confident
- Confident
- Neither confident nor unconfident
- Unconfident
- Extremely unconfident
- Not applicable as I haven't been trained in MI

Attitudes to Lifestyle Counselling

Please indicate how strongly you agree or disagree with the following statements (by either selecting: Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree);

12. My task is to motivate and support whānau in their lifestyle change
13. My role is to provide information on weight-related risks
14. I have been successful in supporting many of my above a healthy weight patients to make lifestyle changes
15. Readiness to make change is the patient's responsibility – no one can help them until they decide they are ready
16. If whānau are resistant to talk about changing their weight-related lifestyle, direct confrontation and persuasion are required to help the person change
17. Thinking about the B4SC referral process, my task is to make sure parents/caregivers accept the referral

Please indicate how strongly you agree or disagree with the following statements (by either selecting: Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree);

18. I want to be able to have effective conversations with patients who are above a healthy weight but often feel the patients are resistant to doing so
19. I feel many of the parents of children who are above a healthy weight are unwilling or do not believe their child has a weight issue
20. I find it difficult to discuss weight-related issues with patients I have just met
21. I am reluctant to discuss weight issues with patients as I do not believe lifestyle interventions work
22. I find discussing with patients how to change health behaviours hard work
23. I feel uneasy communicating about weight issues with whānau of above healthy weight children
24. Our current working schedule is too busy to allow for us to have meaningful weight-related conversations

Please indicate how strongly you agree or disagree with the following statements regarding MI (by either selecting: Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly Disagree);

25. I think using MI is better than giving advice
26. Since using MI in my practice, I have noticed a change in how I discuss sensitive topics such as weight

27. I feel it is difficult to apply MI in my work as there is not sufficient time to do so
28. I feel it is difficult to apply MI in my work as I feel I have not had adequate training in motivational interviewing

Would you be interested in taking part in a more in-depth discussion about MI and its use in referring above healthy weight children and their whānau? (This discussion will be conducted in either a focus group or an individual interview)

- Yes (go to the next item)
- Maybe (go to the next item)
- No

If you are interested in assisting with further research, could you please provide contact details either, e-mail or cell phone number, so that we can discuss this further and arrange a suitable space and time for the interviews.

Thank-you for taking the time to compete this survey. Your answers will provide valuable information.

Appendix H

Individual and focus group interview questions.

(Note that this will be a semi-structured conversation and some questions may be added in response to the answers given to the structured questions).

How long have you been nursing for? And in that time, how long have you been involved in the Before School Check programme? Which service provider?

Considering the recent government announcement that B4SC nurses need to ensure 95% of high weight children are referred onto lifestyle programmes, describe a typical conversation that has occurred with a parent/caregiver when you have identified their child as high weight?

During this exchange, what was it about the conversation that made you feel comfortable/uncomfortable discussing their child's weight?

Thinking about the process for referring high weight children and their whanau, what have you experienced that impedes on that process?

What has occurred during one of these exchanges that has facilitated a successful referral?

Thinking about health behaviour change in regard to your role as a nurse; is it something that you find easy to implement? Why or why not?

How prepared do you feel you are to have an effective motivational interviewing conversation with parents/caregivers of high weight children?

What experiences have you had with using motivational interviewing?

What training have you had? And do you think that was sufficient?

What further support do you feel you need?

Appendix I

Copy of the confidentiality agreement for the audio transcriber.

Confidentiality Agreement

It is understood and agreed to that the below identified discloser of confidential information may provide certain information that is and must be kept confidential. To ensure the protection of such information, and to preserve any confidentiality necessary under patent and/or trade secret laws, it is agreed that

1. The Confidential Information to be disclosed can be described as and includes research and development.

2. The Recipient agrees not to disclose the confidential information obtained from the discloser to anyone unless required to do so by law.

3. This Agreement states the entire agreement between the parties concerning the disclosure of Confidential Information. Any addition or modification to this Agreement must be made in writing and signed by the parties.

4. If any of the provisions of this Agreement are found to be unenforceable, the remainder shall be enforced as fully as possible and the unenforceable provision(s) shall be deemed modified to the limited extent required to permit enforcement of the Agreement as a whole.

WHEREFORE, the parties acknowledge that they have read and understand this Agreement and voluntarily accept the duties and obligations set forth herein.

Recipient of Confidential Information:

Name (Print or Type):

Signature:

Date:

Discloser of Confidential Information:

Name (Print or Type):

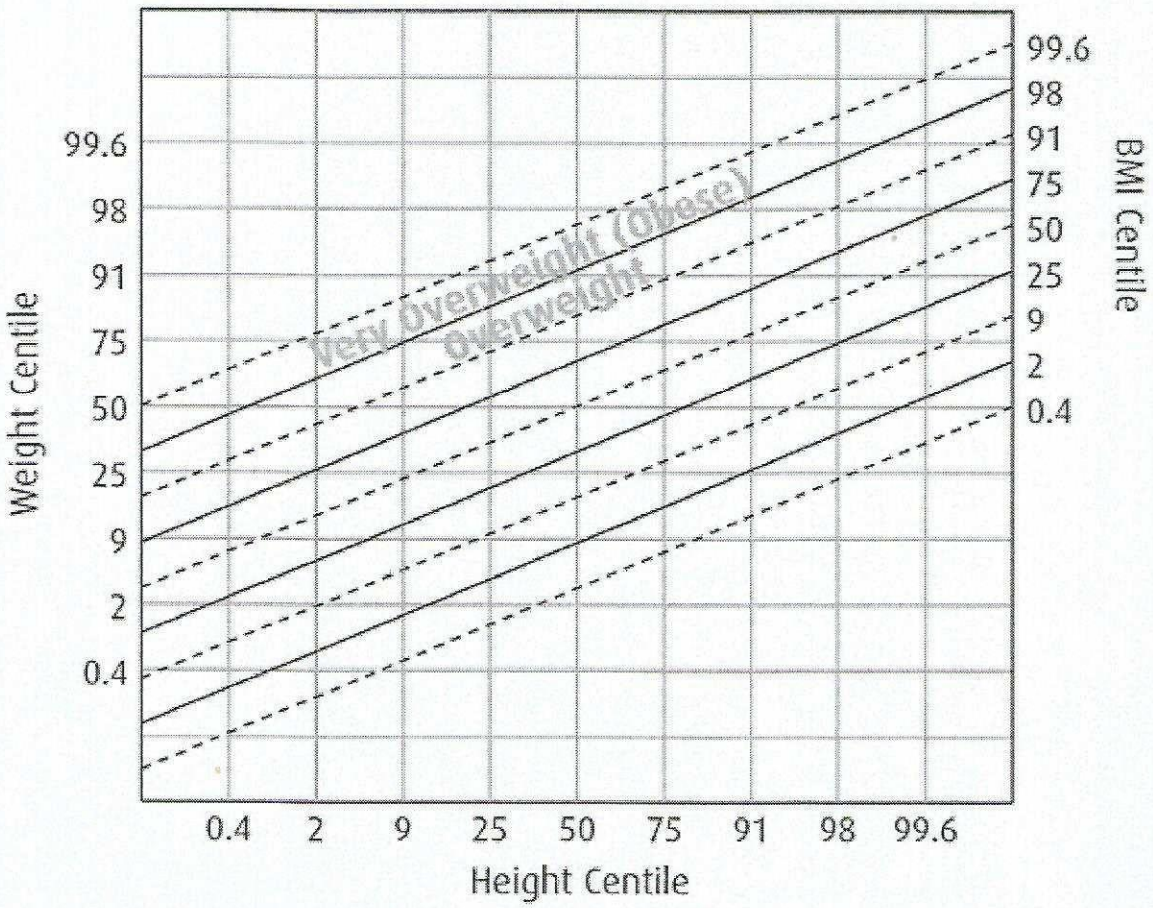
Signature:

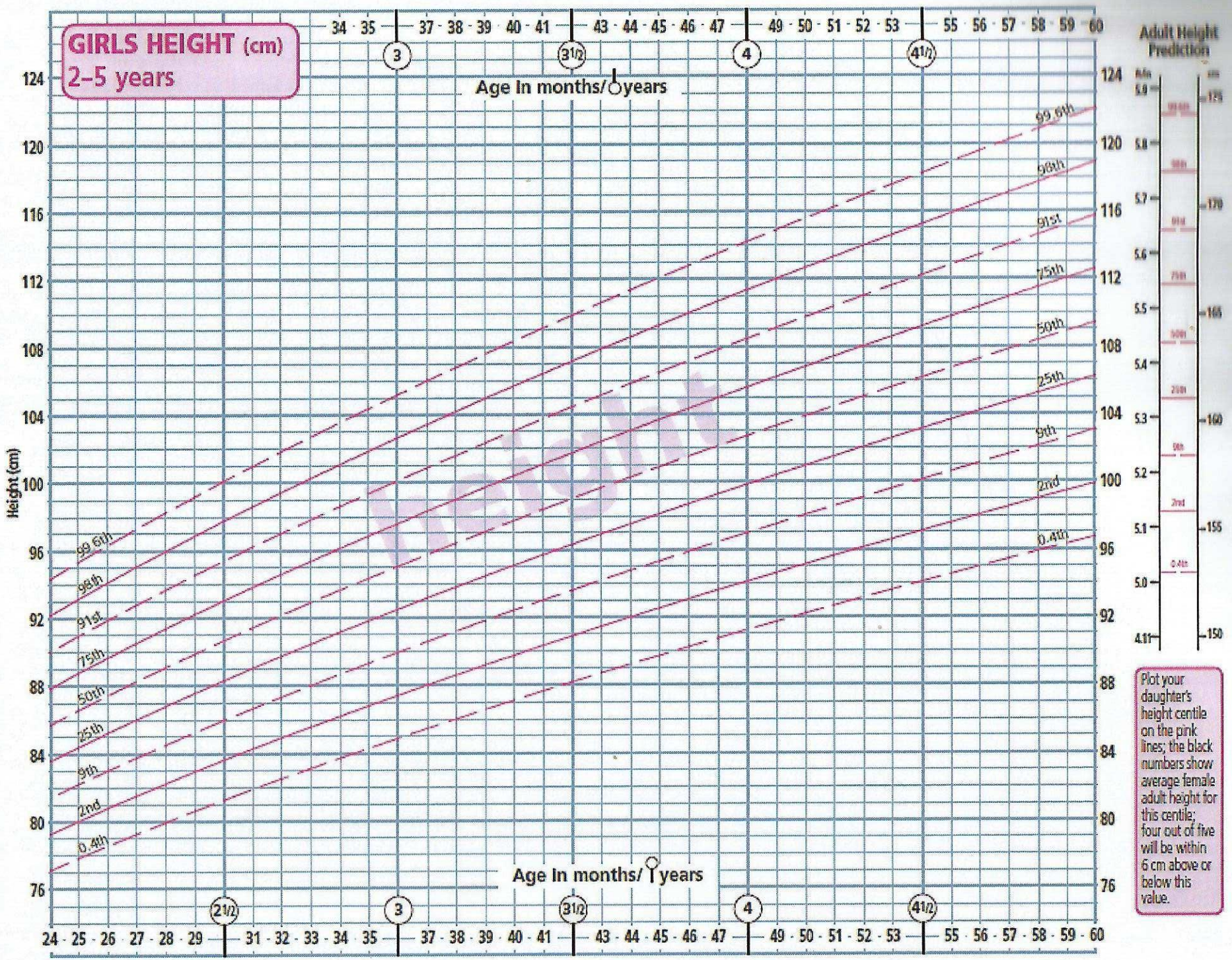
Date:

Appendix J

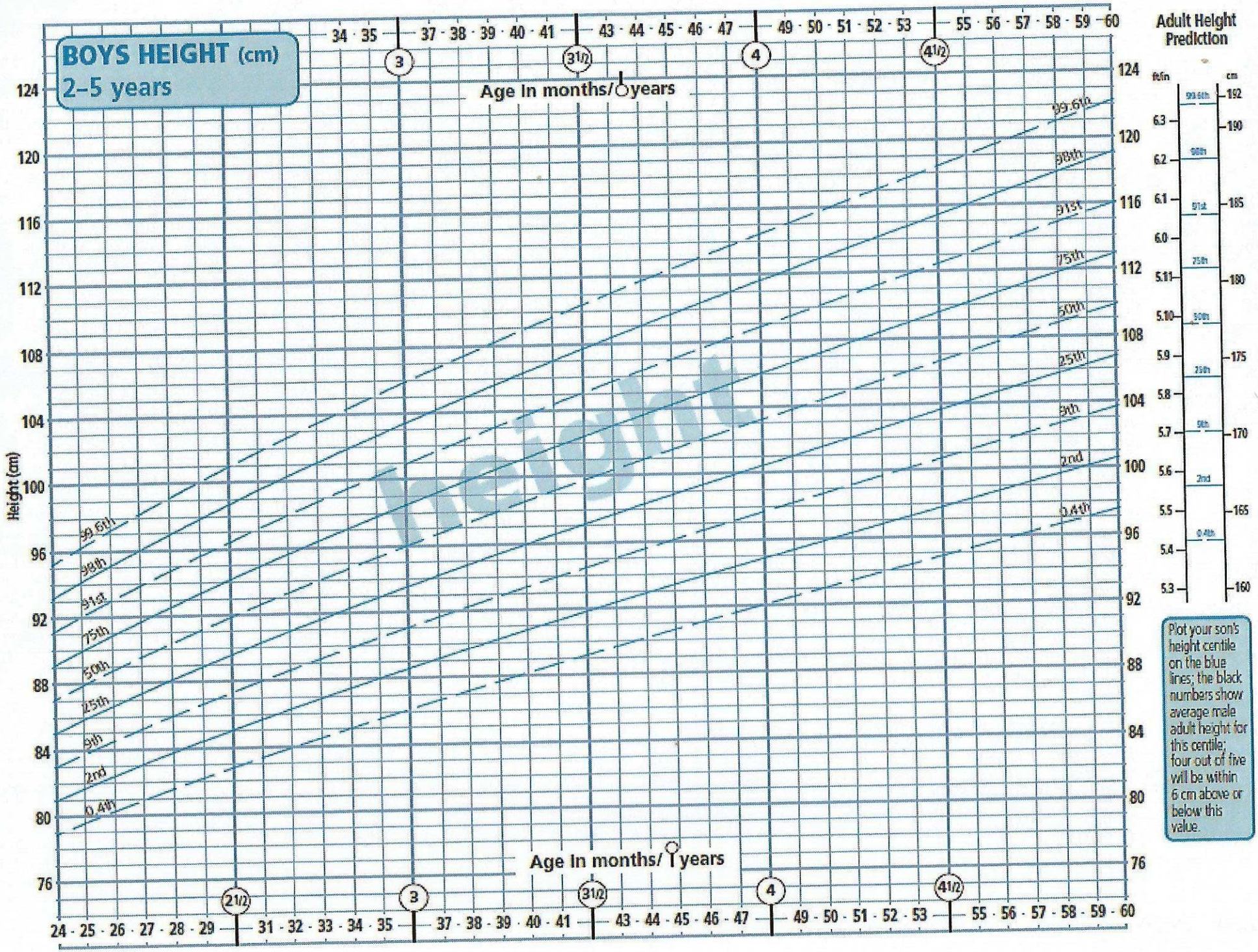
BMI Conversion Chart

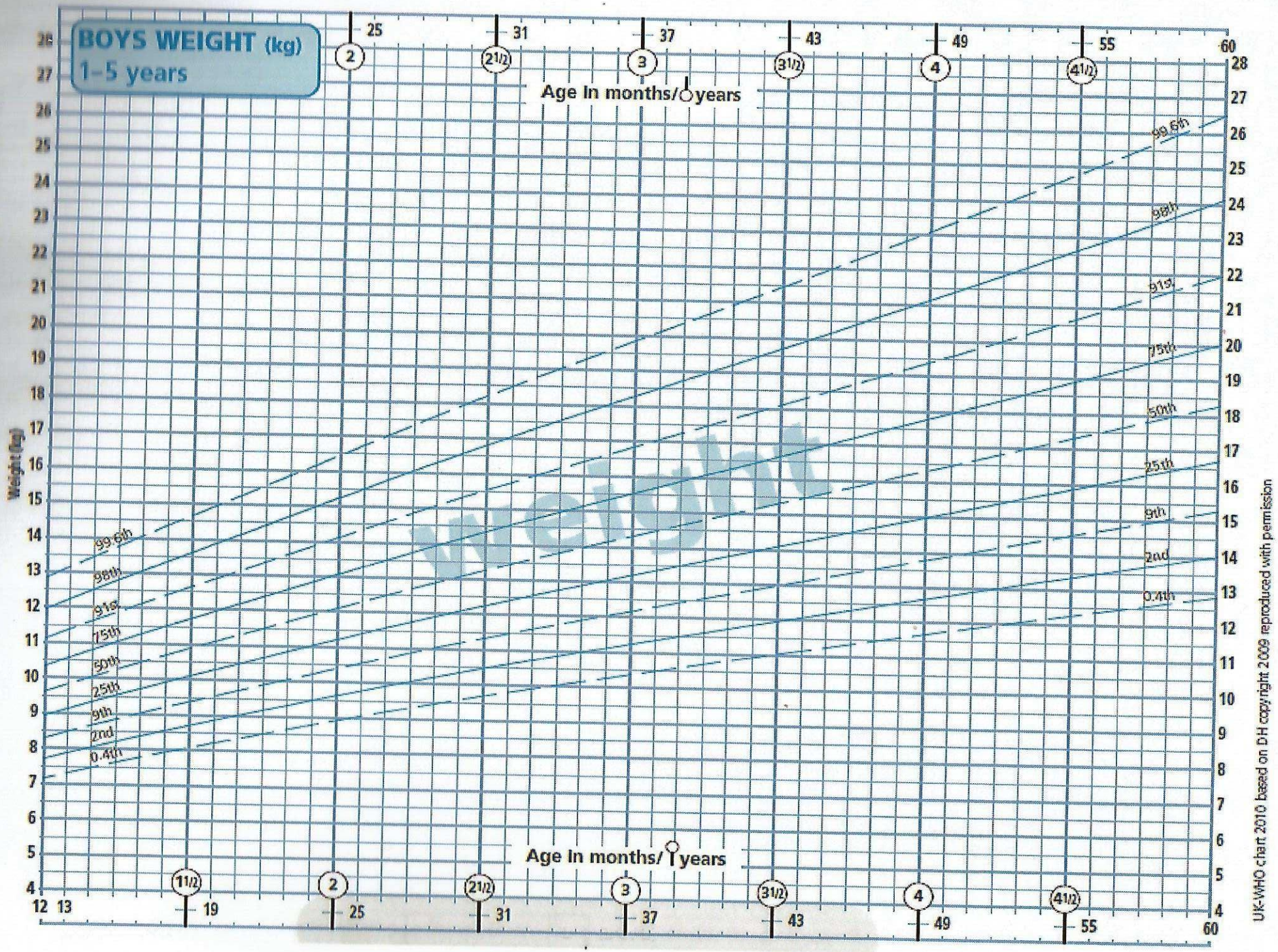
$$BMI = \frac{\text{weight in kg}}{(\text{height in m})^2}$$




GIRLS HEIGHT (cm)
2–5 years
Age in months/ years
Height (cm)
99.6th
98th
91st
75th
50th
25th
9th
2nd
0.4th
Adult Height Prediction
Plot your daughter's height centile on the pink lines; the black numbers show average female adult height for this centile; four out of five will be within 6 cm above or below this value.


GIRLS WEIGHT (kg)
1–5 years
Age in months/years
Weight (kg)
99.6th
98th
91st
75th
50th
25th
9th
2nd
0.4th
Weight
UK-WHO chart 2010 based on DH copyright 2009 reproduced with permission


BOYS HEIGHT (cm)
2–5 years
Age in months/years
Height (cm)
99.6th
98th
91st
75th
50th
25th
9th
2nd
0.4th
Adult Height Prediction
ft/in
cm
Plot your son's height centile on the blue lines; the black numbers show average male adult height for this centile; four out of five will be within 6 cm above or below this value.


BOYS WEIGHT (kg)
1-5 years
Age in months/ years
Weight (kg)
99.6th
98th
91st
75th
50th
25th
9th
2nd
0.4th
UK-WHO chart 2010 based on DH copyright 2009 reproduced with permission

Appendix K

Transcribed individual and focus group interviews.

Individual Interview 1.

11-9-17

Individual face-to-face interview

Participant: Before School Check nurse

Researcher/facilitator] *We'll start with the first question which is similar to what we asked in the survey. How long have you been in your current role?*

Participant] Okay so I've been doing before school checks for probably two and a half years in the medical centre and then my mobile before school checks I've probably been doing for three months the hard to reach ones, yep.

Researcher/facilitator] *So about three years?*

Participant] Yes.

Researcher/facilitator] *Just thinking about the before school checks and in particular when you have identified above the healthy weight child, if you could run me through a conversation you've had that you've been able to successfully refer the family or the caregivers on?*

Participant] So I have recently actually the hard to reach ones I've had quite a few and they're mainly the Māori Pacific Island kids and yes the parents are usually in the overweight range as well from what I've observed, they're not all Māori or Pasifika but that would be the stand out group. They are usually quite open I've found to discussing it but actually having doing the referral is a little bit more difficult. So I've managed, I managed to successfully get them to refer to the GP usually, the healthy lifestyles programme

is harder to get them to refer to. So definitely the last one I had was a young boy a mum who was overweight herself, dad's really into sports and league and stuff so when I brought it up mum wasn't really surprised that he was in that range and I just had a discussion with her and I sort of just you know asked what, how active is he, what does he do in a normal day and all that sort of stuff and I said you know he is in that overweight range and you know we do like to refer for that if possible. So yep I've managed to get that one I got referred to the GP and then she said that the dad was going to get him into rugby and he is an active boy already and so I felt like probably the GP referral was sufficient enough for that one. Yes.

Researcher/facilitator] *So mostly it's through to the GP rather than*

Participant] Yes than the health lifestyle. I had one the other day that she would have been open to the healthy lifestyles but she had so many other things going on that she just didn't feel like she had time. Like her child, some of those kids in that range also have I find they've got deprivation stuff going on as well so then they've got referrals to the dental and referrals to vision and hearing and referrals for injections and the thought of having another referral to another agency coming in and you know a lot of them have, like she had Child Youth & Family involved, she also had Child Protection involved. So she's got so much contact with other agencies that another agency coming in was just too much for her to cope with. So she's happy for the GP because they go there for other stuff anyway. Yep. But most of them seem quite open to it, it's just fitting into their lives I think those hard to reach ones, it's been hard to reach them for a reason so they've got really lots of stuff going on with shift work or parents working fulltime and getting another agency and there is a little bit difficult.

Researcher/facilitator] *Thinking of that exchange, what was it that made you feel comfortable addressing that?*

Participant] I feel comfortable addressing it because I feel like I have the ability because I'm a health professional, I think that's what makes you feel comfortable because I guess, I feel like I've got the knowledge and so I don't really yeah I don't usually feel uncomfortable in those situations because I feel like they're looking to you for advice anyway.

Researcher/facilitator] *So it's part of the whole…?*

Participant] It's part of the whole thing, yes.

Researcher/facilitator] *Okay so if we think about a conversation that when you've tried to address it and it hasn't been successful what..?*

Participant] I think a lot of parents think it's just, particularly boys, that it's just them they're just going to be like that and they're going to grow out of it and I think that's probably the main hurdle. They're just like oh well he runs round, he plays in the backyard, he plays sport at preschool and you know he's going to grow out of it.

Researcher/facilitator] *You don't feel they're open to discussing it?*

Participant] Yeah. No quite often that's you know and I do delve a little bit more and then some, I had one the other day and they're like well actually their brothers are a bit overweight you know, maybe you know so they're sort of yeah particularly boys a lot of people think boys should eat a lot and they're running round the backyard and boys are bigger than girls anyway and yes I find that they're the more difficult ones to kind of get their head around a little bit or get around them a little bit.

5.11 mins

Researcher/facilitator] *So even it's sort of sparking that maybe…*

Yes. Yes sometimes it's still, they're just like oh look you know I'll just keep an eye on it. Yes. Girls, I think parents of girls are a little bit more aware of that sort of stuff for some reason and with boys they just think they're going to be big and they're going to play league and they're going to you know it's okay to be bigger if you're boy.

Researcher/facilitator] *If it's a boy, yes. That answers the question I had on what you think impedes on parents or caregivers accepting referrals, is there anything else you could add to that?*

Participant] Well I guess the time factor is quite a big one for people. And if they have to go somewhere for the referrals so I think you know for some people the thought of having to go back to the GP that's

where the healthy lifestyle things, I've tried you know. So they'll call you and they will do all the work but yeah I think getting transport, I mean for some of these kids especially the ones I do mobile, transport's a big issue, money. Yes. And just general poor time, time poor people I guess.

Researcher/facilitator] *You don't want to sort of put that pressure on them?*

Participant] Yes that's right. Especially if they've got a whole lot of other stuff going on as well, yes.

Researcher/facilitator] *A question around motivational interviewing. How prepared do you feel you are to have an effective motivational interviewing conversation with parents and caregivers?*

Participant] Yes I think reasonably. I think it's about having knowledge because then you feel confident in what you're saying but also being able to listen to what comes out and sometimes it does you know like the Pacific Island boy that I was talking about before who's dad's into sport and mum was like oh well actually he was going to start getting him into rugby maybe we'll get that going sooner and just giving them a bit of time to think about stuff that they can do without saying right here's this form you need to look at this and this is what we can change. And she's started thinking about it like oh maybe we will get him doing that sooner and you've got to give them some time to think about what they can do because if it's, you're giving suggestions and there's nothing that they're going to be interested in then there's just no point.

Researcher/facilitator] *They're the experts on themselves?*

Participant] Yes and their kids they know what they're interested in.

Researcher/facilitator] *So what training have you had in…*

Participant] (overlapping) well I did the motivational interviewing thing at Pegasus when I was, I read it this morning it wasn't that long ago maybe three or four months ago. Yes. So that was a day course and apart from that only just stuff that comes through the, yep.

Researcher/facilitator] *Okay so the day course was it a presentation or was it role playing or a combination?*

Participant] It was bits of everything. It was quite good actually, quite interesting it was about a six hour course or something. And I guess we've touched on interviewing and stuff like that when we do the before school check training and through all our nursing training, it's all stuff about the actual doing motivational interviewing just that course I did a few months ago.

Researcher/facilitator] *It wasn't specifically for the before school check it was a general?*

Participant] Well they did say, well the targeted it at the before school check nurses but I did find it interesting that there wasn't a lot of specific to the before school check stuff, so it was just about motivational interviewing and we're all before school check nurses but when I asked, I said oh you know so how are we going to relate this to four year olds and she was like oh we're not talking about four year olds and I was like mm you know I thought it was a bit odd and I think thinking back on it I was like well I guess it's the parents that we're targeting but also you've got to listen to the kids as well and I thought if they were targeting before school check nurses then possibly there should have been some information relating to four year olds you know because it's important they need to, they're not idiots at four.

Researcher/facilitator] *So more if it was tailored for what you guys are doing?*

Participant] Yes it would have been more beneficial yep. Because even the scenarios weren't even around before school check stuff. They were around random, they were around personal stuff for people on the course I think which I see what they were kind of getting at with that but I did feel like really if they were talking before school check they need to make it more relevant.

Researcher/facilitator] *Is it really only before school checks you've heard about?*

Participant] No we've, I don't think it's the only place I've heard about it but yep I think it was just interesting that that course was targeted for before school check.

10.01 mins

Researcher/facilitator] *And they didn't, they just sort of looked at adult conditions?*

Participant] Yes, yep that's right.

Researcher/facilitator] *Around this whole area what other support do you feel that you would benefit from?*

Participant] Well I guess anything more targeted to before school check stuff would always be beneficial. And I think just by doing it you get better at it, I know like the first couple of ones I had especially now we're more focused on the BMI and how the range changed a little bit, so we're targeting more kids with that probably in my first couple I was really like how am I going to bring this up. Because you know and it can be a bit of an awkward thing for some people because everyone thinks their kid's wonderful and wants them to be in that normal kind of range. So I think it's just practice and practice and you know I don't know whether it would be beneficial to get feedback from some of the parents that you actually deal with with that just to say well you know how did you feel I went at doing that because sometimes you walk away thinking you've done great and they're all sitting there thinking that was just terrible she just told me my kid's fat. Yes so I don't know whether that would be, probably that would be quite a good thing to get some feedback from the parents but once again who does that and who has time for it and all that sort of stuff.

Researcher/facilitator] *So what sort of language or words would you say to a parent when you're having to*

Participant] (overlapping) well I normally do my little graph and say oh look now I've just you know graphing your child's weight and I see that they're in the overweight range I say does that surprise you at all, I usually start with that because I think some parents go oh no look I realise that they're you know so I would say that and then you kind of give them a bit of time to sort of talk about it and usually they come up and they say oh well you know if he does eat a bit or maybe the snacks are not so good, over the winter we don't get outside very much. So I think it's about just giving them some time to think and then yep I don't use nasty words or anything or call anyone fat but I do sort of say they're, I probably don't use obese all that often, I try to work my way round it but I always show them my graph and it is written, obese is written there so I think they have the idea about that. It's quite hard to call a kid obese really, I think in an adult you can, even in an adult it's hard to call them that too. I think you know overweight range is quite

good. So I just try to be a little bit soft about it but then when I get down to the nitty-gritty you've got to you know not beat around the bush I guess and say look you know they are in this, like the ones we're dealing with are in that really top range so the parents need to realise that as well. So yep.

Researcher/facilitator] *So it's a concern that they have that realisation.*

Participant] Yes.

Researcher/facilitator] *Then it's up to them.*

Participant] Yes in a way, yes. And I think sometimes they just need to process a little bit and a lot of people I'm sure do make changes after we go anyway and then if they followed up by healthy lifestyles or the GP or whatever it just reinforces that a little bit.

Researcher/facilitator] *So without getting that feedback you don't always know.*

Participant] You don't know and probably the ones we don't have very many in the practice here but the one we have had one in recent years an overweight girl and we've just got them in time after time after time and really worked with the family and it's very different doing it here than it is doing out in the mobile because I don't have any follow-up. Once it's gone from me I send them to the GP and I send the healthy lifestyles and that's it and I don't know what happens, I don't even know if the GPs follow it up. I hope they do but here I know and in fact if it was here I would follow them up I would make sure they had an appointment with the GP and yep it's quite different, I haven't had an overweight child here for ages, like at least a year maybe more. Yes.

Participant] I don't know why.

Researcher/facilitator] *Alright so you understand the importance of that conversation.*

Participant] Yes, yes. I think you don't want to attack them and you don't want to make it seem like they're doing a bad thing, or they've done a bad thing and you know yes.

Researcher/facilitator] *So you think about the skill that you need to have that conversation.*

Participant] Yes, yep. I think you just need to be approachable really and if you're that then you're okay.

Researcher/facilitator] *Yes have genuine concern for the person there.*

Participant] Yes.

Researcher/facilitator] *That's all my questions ticked off there, thank you very much.*

Participant] That's alright.

TAPE OFF END OF TRANSCRIPT

Individual Interview 2

19-09-17

Individual face-to-face interview

Participant: Before School Check nurse

Researcher/facilitator] *Some of the questions will be similar to what I've asked in the survey but because it's completely anonymous I don't know who's answering what so I just have to ask a couple of things that are the same. How long have you been nursing for?*

Participant] I've actually worked out that I've been practice nursing for 20 years this year and before that I had three years back as RN and before that a year as an enrolled nurse. So about 24 years.

Researcher/facilitator] *And as a before school check nurse?*

Participant] I've been doing that for the past seven years.

Researcher/facilitator] *Thinking about the part of the conversation during the before school check when you've identified a child that's above the healthy weight, if you could describe a conversation that you deem to be successful how did that go for you?*

Participant] I guess it always starts with showing the mother where their child is on the growth chart and the mother can see that her child's above the healthy weight plotted on there. I explain that that plotting represents that the child is above a healthy weight and then I usually say well actually what we've been doing is moving onto the smart tool, so yes so I usually say to the mum how do you feel about that and most mums, it's usually mums I'm talking to, most mums even though it's plotted there right in front of them that most mothers don't like the idea that their child is above a healthy weight and so I don't often find a mother is concerned. It's more like she doesn't want to believe that the child is plotting above a healthy weight. So yeah I try to be sensitive around that and using the BeSmarter tool to just look at certain areas where we might be able to improve the child's health so looking at whether they are having

child appropriate size portions, how much exercise they're getting in a day, how much screen time, just looking at the overall day to day life of that child. Then that brings up some more conversation and then depending on where the child's plotting by using the Canterbury District Health Board growth referral pathway, I then make the suggestion if whether they would be happy for the child to be reviewed in three months for a weight check you know growth check. So I follow the referral pathway and sometimes that might indicate that it's recommended that the child is referred to the GP for a further assessment to look at any comorbidities, that kind of thing. If the child isn't, you know if they're just above the 91st BMI percentile I have found most mothers are willing to do that three monthly follow-up to check the growth and sort of explain that you know if everything else is fine like the proportions are right, the child's getting a lot of exercise, the diet's healthy, you know hopefully the weight will even out with the height as the child grows. I always say to parents look it's not about the child losing any weight it's about them not gaining more before they grow any taller and going over those things that might be contributing to them being above a healthy weight.

Researcher/facilitator] *When you're having this conversation is it something you feel comfortable doing, you mentioned the word being sensitive around the weight is that something you feel comfortable doing generally?*

5.00 mins

Participant] Not entirely, no because I often see the mothers are very overweight. I'm not saying your child's overweight I'm saying your child's above a healthy weight. A lot of the mums I see are obviously above a healthy weight too and I know I can feel that it's something they don't want to talk about and I feel that they're uncomfortable and so I try to keep it light and saying you know that in the long run if a child was to remain above a healthy weight as they get older that they might end up having certain health problems so this is why we do this now, so earlier in a child's life.

Researcher/facilitator] *So you're getting them to think about long term and what that's going to mean for them.*

Participant] Yes.

Researcher/facilitator] *So that's one of your techniques that you use. You mentioned before that those that are just above the 91st they seem to be more receptive to what you're saying than perhaps the…*

Participant] Yes, yes. I have found that. I'm not really sure why but yes.

Researcher/facilitator] *Okay. The time's you've been able to say, get a breakthrough that they're successful what is the response coming from the parents or the caregivers?*

Participant] I mean quite often I hear like he's just a big boy, his dad's big, quite often I get the sense that they don't want to believe what I've told them. Sometimes I feel like they might be taking it personally and they feel a bit offended. Yes. Yes in that situation I do find it quite difficult, yes.

Researcher/facilitator] *Okay so when it's, something like that is happening what would you use to try and sort of get the momentum going and perhaps get a referral?*

Participant] Yes well probably the BeSmarter tools, if there were some things that come up then I've looked at maybe just a few goals. I mean I am under a time constraint too but yes just looking at a few goals where we might be able to make a few tweaks to improve this child's health like maybe limiting the screen time you know or another thing that came up with another child was eating as much as the parents, so looking at reducing the portion size. And that seemed to be received okay. And I just try not to give that hostility back you know because I know it's often a sensitive issue, maybe a personal issue for mum if she's overweight so I try not to, I don't sit there with closed body language and that, I try to just stay honest and keep looking her in the eye and try to ask questions, try not to get defensive.

Researcher/facilitator] *Keep them engaged and on board.*

Participant] Yes if I can, yes.

Researcher/facilitator] *So you mentioned, just quickly that smart tool that BeSmarter tool, can you just briefly describe what that is?*

Participant] Have you not seen it?

Researcher/facilitator] *I might have but I'm not sure.*

Participant] I've actually got it in the car and it's, so there's a flip chart that explains it to the before school check nurses and how it works, but basically it's just a sheet of paper and BeSmarter stands for different areas that you might be able to improve and on the back it goes into what those BeSmarter stands for and you can see the couple of goals. And so it's a two sided sheet of paper and you can give it to the mum to take away. So, it's a little tool that we use but I haven't been using that for very long at all, like I've only had it this year. But I think it's helpful.

Researcher/facilitator] *You've found it useful the times you've used it?*

Participant] Yes because it's got all the information there and so it highlights some areas where mum might not have thought about that might be affecting their child's weight, like too much screen time or the portion size of the food. So, it's right there and on the back it goes into a bit more detail, a bit more information for mum and on the front of it we can just set a couple of you know short term goals to look at.

Researcher/facilitator] *It's up to them to choose what those goals are?*

10.15 mins

Participant] Well if they're identified through talking then I might suggest to them well you know it's recommended that this would be a good place to start, like reducing the portion size and is that okay with you and I write it down. Yes.

Researcher/facilitator] *And going back to before do you think that hinders the process or impedes on your ability to be able to refer – you mentioned that the mum, mostly the mum, is overweight herself and that can be a really sensitive topic and also you mentioned boys being a bit big and they say well he's active like his dad. What other things do you think impede on that?*

Participant] I think yeah the mother's response is, I've even had some mums laugh you know and that might be a nervous reaction or what have you but it's like they don't believe what I've just said and they don't want to address it, yes and like yeah I guess they've not taken me seriously, don't want to listen, don't want to know, don't want to address it.

Researcher/facilitator] *And you can't go much further with them if they're …*

Participant] No.

Researcher/facilitator] *Okay.*

Participant] No

Researcher/facilitator] *You mentioned boys before too is that a trend you see that if a boys bigger they tend to be more dismissive there or is it an equal with girls/boys?*

Participant] Yes perhaps with boys more mums say their dad's big too. Yes. And he'll just grow out of it, he's just like his dad.

Researcher/facilitator] *And the other one you mentioned too was having the time, in a short amount of time you don't feel like you have enough time and space to address it.*

Participant] Yes. Yep.

Researcher/facilitator] *Generally when you're addressing health behaviour change in your role is that something that you find easy to do?*

Participant] Oh you mean in other areas of my work? No incredibly difficult yes. Like we used to do the annual diabetes reviews and it was a nurse run clinic and year after year you know I found a lot of our patients didn't want to make any changes whatsoever and I'd be seeing them year after year and we'd be

going over the same things. And I mean the annual diabetes check isn't really done any more now it's kind of changed and I think that's because they realised that well yes for the funding you know those changes weren't happening so the funders pulled it. It's been reassessed and distributed slightly differently now. And that's extremely frustrating as a nurse because you want to help, you want to try and change the outcomes for our patients. And I mean I did a motivational interviewing course at Polytech in 2009 and so I saw through you know the video clips of how they use it in America for drug and alcohol addiction the motivational interview and it's the first time I'd heard about it and I really saw that it can be effective and that it can work. But after that course I remember thinking oh this is wonderful I got really inspired and I thought well where is this happening in Canterbury and I thought well maybe I can refer some of our patients or something and you know the more I looked I couldn't find it. I don't know if Dr Bell was in Canterbury then in 2009 but I couldn't find any practitioners of it really. And so, I always had it in the back of my mind that I thought it was a great thing, but I never really saw it put into practice and I couldn't really use it myself. And then when it came up for the before school check nurses I thought positively, I thought oh this is really great you know. Then I went along to the training and I mean it was okay but still don't think it was enough you know. No, it wasn't enough, and I missed out on the lecture or the presentation by Dr Bell which I think might have helped me too, but I was sick so couldn't go.

15.34 mins

Researcher/facilitator] *You mentioned the training just before, so what did the training involve?*

Participant] It was a couple of meetings at Pegasus with a few of the other before school check nurses and we kind of did a role play with a colleague and it was about sort of reflecting and – I'm a big vague now but basically we used the marbles and when we were talking like we would talk about something we wanted to change like, maybe it was more exercise and with my colleague it was trying to use the motivational skills to try and get the person to come up with their own solutions and so we put a marble up for reflections and something else there I've forgotten what it was, but basically that was meant to be a way of seeing whether you were using motivational interviewing skills correctly or not. But it was a little bit confusing and so we only ever got to do that twice for two separate meetings. And yes, I didn't find it that helpful.

Researcher/facilitator] *It just wasn't enough?*

Participant] No I think we definitely needed more role play, I think we needed the facilitators to actually show us how they do it, how they use it in front of us. We didn't get to watch a video or anything of it being used in practice. And maybe some of the other nurses had more experience than me but personally I didn't find it very helpful.

Researcher/facilitator] *You were left to figure out how to apply the skills yourself.*

Participant] Yes. They recommended getting this book which I haven't purchased yet because I have to buy it myself so I haven't done that yet even though my other boss, because I work for Rural Canterbury doing before school checks all day on a Thursday and I do all the before school checks here for our four year olds and she said she would fund it but just haven't got that far yet. I got the name of the book and then I didn't get any further and I kind of lost interest because of the course run through Pegasus I just felt like you know unless you're really supported and getting good feedback I don't know how well I'm doing. And I do slip back to the normal way I've practiced for years as a nurse. I hear that for a lot of our patients if you give lots of information it just goes in one ear and out the other so I guess I try and change my practice a little bit to try and use open questions to get them to kind of say more, talk more to me so we can talk more about things. But I don't think I'm an expert at all at motivational interviewing and I'd like to get better, but I don't think the course I just did helped me very much.

Researcher/facilitator] *You can definitely see the value and the importance of being able to have an effective conversation?*

Participant] Oh yes, yes. And by myself I've gone onto You Tube and watched the motivational interviewing and some of them make it look so easy and you just think wow you know why can't I do that, I'd love to be able to do that you know. Yes.

Researcher/facilitator] *But you need that feedback?*

Participant] Yes definitely. Yes. I still feel like an absolute beginner.

Researcher/facilitator] *That answers my questions I had there, if you'd had more training and more feedback then it's something you would apply in your work as well. That's excellent thank you so much.*

Participant] You're welcome. The other thing too I think is having the time but you know they did talk about how you can use it briefly so that would be good but it's about my colleagues too, like I want to know the other people the doctors and the other nurses I work with are going to be using it too, like I can't just be the only one who's going to start this new trend but I definitely can see the benefit and I'd like it to be used more but I feel I need more training definitely.

Researcher/facilitator] *Is there anything else you'd like to add?*

Participant] Yes I just think the training needs to be a lot more thorough and like even a first year nursing student said I was asking her how she's getting on with her training and she said oh we're learning all about you know communication and rapport building and all of that and I said oh yes how are you going and she said well it's good but it's nerve-wracking because we've been videoed and I said oh but that's great because then you get really good feedback and you can see yourself you know. And I know everybody probably finds that very daunting myself included but at least you can see how you are perceived by your patients and you'd be able to learn from that. So, I really think something like that is needed, yes.

Researcher/facilitator] *You'd strongly recommend that?*

Participant] Yes. Yep. Even though I'd be very nervous about doing it personally, yes.

Researcher/facilitator] *Getting over that initial fright.*

Participant] Yes but I want to be effective and I like doing the before school checks I really do enjoy it, but I must say having to talk to mums and dads and caregivers about their above a healthy weight child I still find quite daunting. I mean I do my best and I try not to offend and try to be empathetic and you know how would I like it if some nurse said to me that your child's above the healthy weight you know so I come from that area but it's still a very delicate thing yes and quite tricky.

Researcher/facilitator] *Very sensitive.*

Participant] Yes. Yes.

Researcher/facilitator] *Okay*. *Thank you very much.*

TAPE OFF END OF TRANSCRIPT

Individual Telephone Interview 3.

28-09-17

Individual telephone interview

Participant: Before School Check nurse

COMMENCES 00.54 mins (after general greetings and thanking the participant)

Researcher/facilitator] *Thank you again for agreeing to this.*

Participant] No problem.

Researcher/facilitator] *And I sent some information yesterday about what it is we're doing, and I got the consent from you as well. I'm fairly certain that electronic signatures are fine so that's all good. What I'll do this morning is just a continuation of that survey and I will probably need to ask just a couple of questions that have already been asked in the survey but because it's completely anonymous I've got no idea who's answered so it's just a matter of understanding a little bit of what it is that you're doing and where you're coming from. The first question is how long have you been nursing for and in that time how long you've been involved in the before school check programme?*

Participant] Oh goodness a long time, over 20 years about 20 years from now when I left from school. So, in nursing 20 years I've been a mixture of community, Princess Margaret, St John of God, but before school checks, I think I might have been doing them five or six years off and on at two different practices. Yes.

Researcher/facilitator] *At the moment you're at general practice?*

Participant] Yes, I'm in a new practice in Rolleston. A new practice has opened up in Rolleston, I'm a practice nurse at the moment I've been there three years.

Researcher/facilitator] *Alright and just with the before school check programme when you're talking with a parent or caregiver and you've identified a child as above a healthy weight and you've been able to successfully refer, could you describe a conversation that you've had?*

Participant] Since beginning before school checks it's evolved. Initially I was aware of the height and weight and I didn't think much of BMI and physical education okay that's normal for this age group. But now over the last probably 18 months there's been a big thing about the above average BMI so having that conversation I've found it really tricky initially. So, the height and weight but I went to a healthy conversation speaking course recently and that changes everything, who, what, why questions and I had asked those questions and I've got a little bit better at asking. Well sometimes when you do the NHS height and weight check it doesn't actually capture the four-year olds, sometimes it's for underweight or overweight so I haven't been using that. I'm going back to the old-fashioned WHO guidelines and drawing up manually on a piece of paper and that and saying oh you're above the healthy range, if I say the word overweight I find that a bit, people get a bit upset about it. What do you mean my child looks okay, do they look fat to you? sort of thing. And I've had to work hard how do I word this without offending parents if that makes sense. Yep and I've had a lot of ethnic cultures that I find quite hard. Mainly Pacific and Samoan and the Māori group and their weight might be a little above average and you've got Filipinos coming in or other cultures and they're above their healthy weight or Asians and so it's trying to put that all in there the culture plus their lifestyle and all that. So, and parents are really focused on that chart aren't they and they say oh it's above weight. So, this is what we're looking at, we're looking at lifestyle and everything like that and there's a programme up north they're doing with the before school checks and it's called Smart, I can't remember what it's called now, I think it's Smart. I haven't got my before school stuff with me at home. It's one that they talk about having breakfast are you eating regular meals are you sleeping and all that and so what my colleague and I have done is put it on a poster and made it a visual thing. Are you having breakfast are you having lunch are you sitting together as a family with a meal. Are you doing that activity you know tell me a bit about your activity, for children it's 60 minutes a day and they've got pictures of screens less than two hours a day. So actually put it on a poster and make it visual and then we've got a plastic plate with the different portion sizes and we've grabbed the kid's hand and say this is how much you should have for veges and stuff like that. So, I've done it that way. That's how we've done it I'm a bit of a visual girl and the kids love it you know, and we've got posters for breakfast and lunch and snack ideas we've gone in that way in regards to having that healthy discussion. Then we've talked about well tell me a bit about what your son or daughter's doing, and we've done things like sitting up off the floor, hopping or walking to the door, touching the door, coming back and sitting down and those things and making it fun. And I've learned to ask questions

about oh tell me a bit about your family life, are mum and dad well, is there any diabetes in the family or how tall is dad. So, I've made it, more well that's how I've made it made it lots of focusing oh gosh that child's really heavy but looking at the whole thing. And that's taken a long time to get to that point without feeling like I'm offending anyone.

Researcher/facilitator] *For you it's been a mixture of working with colleagues to work out how to do this as well as you mentioned the course you did before.*

Participant] Yes.

Researcher/facilitator] *That helped with asking certain questions.*

Participant] Yes, the healthy conversation because sometimes well I had one recently that both parents were morbidly obese, and I measured the child and they're above the healthy range and does he look fat to you, you know. Well these are our guidelines I'm here to help you support you and they say, well we're morbidly obese do you think we'd do that to our child? So, it was quite interesting conversation and you know they're doing the healthy lifestyle making their own food instead of buying takeaways those sorts of things.

Researcher/facilitator] *So it's one of your successful referrals?*

Participant] Yes and then we refer them to like the next bit I hate is you've got to refer them to the GP, so we refer them to the GP and she says well what am I going to do about it you know I don't mean in those sort of words but recalling them every three months for height and weight check and then I find some GPs say well why are you doing that. I said well it's part of our guidelines we've got to have this discussion, yes about diabetes, about heart problems and I've already asked that in the consult with the before schools. So, I don't know what other practices are like, but I find that really hard. Well why are you referring them, you've just already had that conversation with them, so these are our guidelines. Sometimes I don't think it's

Researcher/facilitator] *The guidelines don't match what's actually happening or what should be happening?*

Participant] Yes well sometimes it could be the different practice and all that. So yeah, the height and weight's fine but I think it's having that rapport and bringing them back and say look it's all okay we'll check them in three months' time and part of our referral is to catch up with the GP and just do a bit of assessment. So yep I don't know what other people think but you get your negative and positive stuff but for me it's learning how I believe about the nutrition, the height and the weight and all that, it's my belief too not bringing it onto other people. Yes, and not being scared to ask that question, yes.

Researcher/facilitator] *You feel fairly confident to be able to ask those questions?*

Participant] Yes, yes and what I find with the before school check I must admit I get onto the computer system and see if they're in the right BMI because sometimes children have left and I've thought oh my gosh they're in that above 91-98% you've got to refer them and you've got to give the lifestyle coordinator advice and all that sort of stuff. And I'm thinking oh gosh and I must admit I was a bit stressed about have I given the right advice, yes.

Researcher/facilitator] *Try to tick all those boxes.*

Participant] Yes, yes. It's getting a bit harder I think because you don't want to miss those children that need the support or the family's need is high. And other times we've referred them to the lifestyle coordinator, have you heard of that person?

Researcher/facilitator] *Through Pegasus Health?*

Participant] Yes through Pegasus Health its parenting help and the Green Prescription and all that, some of them don't want that, they don't want a bar of it. So yep.

10.13 mins

Researcher/facilitator] *You're finding that quite often they don't want to do that, they just want to do their own thing?*

Participant] Yes.

Researcher/facilitator] *Okay.*

Participant] And so what I catch-up and oh how's things are going and things like that and then also catch up with them with a height and weight check and then I update our GP and say this is what's been happening. But some parents decline to go any further than the GP or a support person.

Researcher/facilitator] *Just want to manage it themselves.*

Participant] Yes, yep.

Researcher/facilitator] *Okay. You mentioned a few things before about what impedes on your ability to have an effective conversation, is there anything that comes to mind about what it is that you think gets in the way of being able to do that?*

Participant] For this discussion about things in general?

Researcher/facilitator] *Yes for that weight conversation, yep.*

Participant] Yes. I'll just think I've done a few recently. I think cultural one's a big one, yes, I notice a few, I had Filipino a family come over and they've just moved to New Zealand and the different food varieties. And mum and dad have moved the countries and the food's not available and they're getting used to Kiwi food, maybe takeaways for example. Or they're working long hours and they might be eating on the run or the kids are at preschool or childcare and they have their main meal at lunch and then they get home and they might not eat until later on in the day. And then I have heard some kids don't have breakfast in the morning because they might have the meal a bit later on in the day or they're busy, got to get up early and that sort of thing so they might be having breakfast later in the day or they're not having breakfast. Yes. And then sometimes you don't know if they're just telling the truth because I have a lot of

visuals do you know lunch yes, but you kind of think oh are you guys eating regularly. Yep. And it's building up that trust isn't it.

Researcher/facilitator] *Yes so perhaps the feeling of being judged and they want to say the right thing.*

Participant] Yes for the right family yes. And a lot of families have come in and said oh what food should we be giving them so they see the poster ideas and I give a little booklet and say tell me a bit about what do you buy, have you got a vege garden you know just prompt a bit more and to see what's happening in the family and stuff like that.

Researcher/facilitator] *Yep so you've applied quite a few different techniques to try and build on that conversation.*

Participant] But when I'm doing the weights it might actually be normal for that child and they might grow into it, you know how they're sort of quite short and a little bit, I'll use the word tubby but I don't mean that, but you know they're all short and they're all still got their baby fat around them and try to encourage them well that's your height might check in three months and see how he's going because he might have grown taller. Yep. And I also look at their feet and their hips and the way they're walking because with some of that you can tell you know if they're a little bit on the heavy side their posture and everything like that might be a little bit different.

Researcher/facilitator] *You can pick that up.*

Participant] Yes look at the whole picture. Yes.

Researcher/facilitator] *Just in regards to motivational interviewing what training have you had if any?*

Participant] Well I did a little bit, gosh I only did it a few weeks ago, motivational speaking and we did a big group and we went in the weekend I think they've got it going at Pegasus at the moment and it talks about who, why, how, conversational speaking in regards to health.

Researcher/facilitator] *So it was a weekend workshop?*

Participant] Yes, yes and they also had a great website you can go to, click on it and it will give you some ideas about the talk. It was about a year ago some spokesperson that came and talked to us and another one is Appetite for Life is another thing I've done that as teaching to other people and that's all about food in the pantry, sort of back around and relating it to family and children. Having kids of my own is another thing.

Researcher/facilitator] *You're applying a whole lot of different methods as well as personal experience.*

Participant] Yes. Yep. And talking amongst my colleagues because that was an area I found want to really hard how to have that conversation and talk amongst my colleagues.

Researcher/facilitator] *It sounds as though it's something really important to you. Just in a general role when you're dealing with health behaviour change is this something you find easy to do, applying the same sort of skills?*

Participant] Well I always throw back at the family the work we with adults with our programme whether it's mum or dad or whoever is there, look I'm here to help you what is one thing we can change? It could be I'm just going to have wholemeal bread instead of white bread I don't know just looking at one thing at a time, yes. Or we're going to sit down at the table and have a family meal twice a week. Yes. Or maybe we just went to the park over the weekend and had some family time so it's looking at not doing a whole lot of things at once but seeing what could be achievable for that family. Yes, make it realistic for them.

Researcher/facilitator] *Okay I'm skipping back again so going back to the motivational interviewing again – did you find that useful, was it sufficient the training that you had?*

Participant] For me personally I really enjoyed it, it was a workshop at Pegasus on a weekend and it had all variety of nurses from all backgrounds, hospital, low socio-economic medical centres that might have a high Pacific range, where I work there's a multitude of cultures coming in and usually it used to be quite a rural area but now Rolleston's booming with new people coming in all the time we've got migrants, we've got people that have moved from the city into here. So, I'm learning a lot from the community and yes, I

learned a lot about that. It's who, why, how question and not being judgemental and in that course I didn't know how to ask some of the questions. Like if you had $20 how are you going to budget for your food that week. I didn't know how to ask those people. Or how I could help them, so I've learned from different suggestions and seeing what supports are out there and everything like that because that could be a problem, it could be financial, or it could yep.

Researcher/facilitator] *It's being able to establish that rapport and that engagement with that person and understanding where they're coming from so that you can help.*

Participant] And you want them back you don't want to, I don't want to lose them, I want them back. Yep even if it's just immunisations or something or when they come in oh hi how's your whānau, how's your daughter or how's your husband you know those sort of things, yes.

Researcher/facilitator] *The specific techniques that you quite like from what you've learned from other people in the courses that you've applied. What further support do you think that you would need in this area or would you like?*

Participant] I would like lots of stuff. I don't know what I've learned I know there's lots more support from Pegasus that you can go to because sometimes I feel that I'm taking everything on board and I'm not sure what to do but now I'm more aware of who I can ring. So, if the before school and I've got concerns they've got that lifestyle coordinator to ring and they guide you with parenting and everything like that whereas before I don't know where to go, what do you do. And not take it all on board and realise that there's a whole lot of supports out there and maybe only one thing you change that you can't fix everything all at once it will take time, yes. But yeah that and the PCW is another one I use a lot of, it's the Pacific community workers.

Researcher/facilitator] *Okay.*

Participant] Because I follow the practice you've got to fix everything and that doesn't work straightaway does it, no. And another one I notice that if the child is above weight how do we refer them for dietitians we had one recently and they didn't fit the criteria because they didn't have the other comorbidities other than being obese is like diabetes or other problems, how we fix those with parents, we've looked at eating habits, lifestyle but they need that extra input with the dietitians. So how do you get that in the public

system I found that was a bit hard recently. Having a dietitian for a child that was, might have been a seven-year-old child but quite a bit obese. Yes, so there's those things and the parents come into you well I want this resource but can't afford it privately, how do you get into the public system.

Researcher/facilitator] *Okay so that's where you find it's hard?*

Participant] It's hard yes I just had one recently that kept going back and forth but then when we got in, delved into it a bit better we talked to the mum and she told us about her family history and her husband's family history and in the pipeline there's diabetes so we tried again referring the child and saying okay the maternal grandfather, great grandfather had diabetes and the mother had you know, worked it out a bit more and got more further assessment and just referring this child who is above the healthy range, yes.

20.21 mins

Researcher/facilitator] *Okay so it sounds like you're going to the extra mile for your patients as well?*

Participant] Yep I take it on board, I've got to stop and refer to the appropriate people. And sometimes they leave the before school check and I think oh have I done that right you know they do leave sometimes a bit angry we've mentioned the healthy above the healthy range or you think oh have I done the right thing. You have to have that conversation and it's up to them to whether they choose to do it.

Researcher/facilitator] *You've applied some techniques to try and make sure you do it sensitively with them.*

Participant] Yes because I don't, I don't know how to do it without offending them because I'm a parent myself and I think if it got told my kids were chubby kids yeah, I don't know how to take it. That's me initiating it taking it away from the high five it's the conversation afterwards.

Researcher/facilitator] *It's still a little bit of tweak there to feel confident having that conversation?*

Participant] Yes.

Researcher/facilitator] *Okay and so you mentioned before that you used certain visual tools to help with that.*

Participant] Yes, I'm a bit of a visual girl so from nutrition I think it is, there's a plate you know, and they do half of it's in veges, quarter of it's in potatoes or bread or whatever and we have that around with the kids. Because I'm not at work I haven't got the stuff. Another one, something we just learned about dental hygiene I'm going to put posters up and put do you brush your teeth you know those sorts of things and have pictures and everything up. I do a lot of posters like a lunchbox poster and I give them out to the parents and we've got a poster with snack ideas, breakfast ideas, and do visuals, yes. But when we do the visual thing we've incorporated everything, the family sitting together, portion sizes, do you get enough sleep, got a picture of a child sleeping. But that's how we've worked it out. I mean that might be different to everyone I know the before school checks have changed over the last few years, got a lot to cram in there. Also pick up things their height and weight is their safety concern have they been neglected or been over fed, or you know those sort of things. It's not just, are you eating healthy are you looking at eating regular meals or are they under nourished you know there's a whole lot of stuff. It's a big thing I don't know what other nurses think, I think the trick is not to take it all on board and realise there's resources out there for me anyway.

Researcher/facilitator] *Okay. It sounds like you have quite a bit confidence by and large but there's still a few things that you'd like a bit of support with. But thank you so much for that.*

Participant] I hope I haven't been wishy-washy sorry.

Researcher/facilitator] *No, no, no you've answered all the questions I've got there.*

Participant] When I get to work I'll email what I'm talking about and what we put there.

Researcher/facilitator] *The tools okay.*

Participant] The tools that I use at work and I've put into pictures.

Researcher/facilitator] *Oh thank you.*

Participant] It will just give you an idea of what we use, and you might hear from it when you do the group with the girls or whoever you're talking to. I'll email it when I get to work.

Researcher/facilitator] *Okay.*

Participant] I hope it's been a little bit of a help.

Researcher/facilitator] *Oh it's been a great help, you've given me a lot of information there that's been valuable. Thank you so much for your time.*

TAPE OFF END OF TRANSCRIPT

Focus Group Interview 4.

29-09-17

Focus group interview.

Participant 1: Before School Check nurse

Participant 2: Before School Check nurse

Participant 3: Before School Check nurse

Participant 4: Before School Check nurse

Researcher/facilitator] *Just for the benefit of, one of you didn't do the survey so it was just the questions asked were about going over your experience in terms of your confidence and any sort of issues that come up that may impede your ability to have a conversation with parents of children who presented above healthy weight and anything else to do with training as well and any support you've had in the area of training and in particular around motivational interviewing if you've had any experience with that as well. That's what the survey was asking, and this is the continuum of that as well to get a bit more in-depth information about your experience. The first question I need to ask just because I don't know in terms of the surveys are completely anonymous I don't know who had answered what, just in terms of your experience how long have you been practice nurses and involved in the before school check as well?*

Participant 1] I've been a practice nurse for probably 15 years, I've been involved in the before school check since it started.

Participant 2] And I've been a practice nurse for three and a bit years and I've been in the before school checks for about I think it's two years. Yes. With the doctor he has mainly older patients so even though there's a lot of patients he doesn't have the huge number of four-year olds. So, I've probably done about 15 before school checks in total I think I can't remember something like that. I can't remember I haven't kept the numbers.

Participant 3] I've been a practice nurse for 16 years and I've been involved in the before school checks since 2012/2013.

Participant 4] (response is inaudible)

Researcher/facilitator] *Okay so there's a bit of varied experience here.*

Participant 1] But I have to say that when I first came here I did lots of before school checks and in the last six months I've only done about three.

Researcher/facilitator] *Just thinking about when you've having a conversation with parents of children above a healthy weight and you've identified them as such and you're then needing to have a conversation with them about that if you could describe a conversation where it's gone successfully and one where it hasn't, how that's gone for you?*

Participant 3] Well I would normally get them to just have a look at the, turn the computer around and let them have a look at where they've been tracking. I've probably had three that have been sort of you know over 98% but they've been all three of them have been sort of always been leading there and neither, none of the three conversations went that well and the parents involved didn't want anything to do with me referring them.

Researcher/facilitator] *Okay so you've described before about one of them getting quite angry?*

Participant 3] Yes, she was she said basically that he's always been on that percentile he's healthy we eat a really balanced diet he's really active I'm not giving my child you know a complex about it his eating and his weight when he's only four.

Researcher/facilitator] *This is a case where they're born on that?*

Participant 3] Yes, all three of them were born there they were tracking nicely up there really healthy happy active children with great diets. And yes, all of them expressed concern about being referred.

Researcher/facilitator] *And for you it was more important to have that patient come back to the clinic?*

Participant 3] Yes rather than pushing them away.

Researcher/facilitator] *Okay and so any that have gone well, you've been able to*

Participant 3] Well there's only been those three the rest, we get a lot of the practice that I'm part of we get a lot of Indian and different Asian ethnicities and so a lot of them are quite small anyway, so they're not sort of the bigger New Zealand children, they're tiny anyway.

Researcher/facilitator] *They need a different measurement?*

Participant 3] Yes, yes, they do, yep.

Researcher/facilitator] *Anyone else like to add?*

5.01 mins

Participant 1] Yes, I haven't, I have had some where they've been what you might call you know they might be 70% for their height and then 91% for their weight so that would be more of a discussion. I did refer one girl who met the criteria for a dietitian their mum was actually quite good about it. They engaged with the dietitian twice and then they didn't, I guess they didn't follow-up but the whole family was probably overweight, so I did tell the GP and he was like oh they probably all need to go you know because I said I was going to do a referral. And when, but

Researcher/facilitator] And how did you approach that conversation?

Participant 1] Oh well I just did the whole you know looking at the chart and showing where she was and things like that so rather than, but I do have apprehension about talking about weight because I know of circumstances where people have complained, or they get quite sensitive and the whole family's big. I mean I think parents are more sensitive about their children than probably themselves. Yes. But I went to,

we had a dietician at one of the Pegasus training and I think there were three speakers and I found that was quite useful a few months back. I can't remember, it might have been last year.

Researcher/facilitator] *That was in September last year?*

Participant 1] Yes that was quite useful. There was some training that Pegasus did, but I think it was on a Wednesday when I was working during the day. So with practice nursing it's really hard to get time off when you're at work, also there's just so much education going on like you could do forty hours in a year quite easily and it's trying to you know squeeze it all in because there's always a lot I go well which do I think's more important kind of thing because with doing the before school checks is just one of the things we do. Like we do vaccinations with everything else. But I guess it's an important thing because I think the sooner they start introducing that idea I guess for children or otherwise they, when I was in Auckland I know a practice nurse that told me about you know two children that were still growing and they're 80 kgs and their parents didn't realise they were overweight you know so it's sort of can come as a big shock. They don't actually, because children are getting bigger, so they don't think their child's overweight. And if the whole family's bigger then it's just well we're all like that you know it's not, it's normalised. Yes.

Researcher/facilitator] *So it's a very very sensitive conversation to have.*

Participant 1] Yes.

Participant 3] Sometimes I guess if I was faced with that situation then I might sort of say to them you know are they a fussy eater or do they eat a varied diet or if they're sort of oh no they're pretty fussy. Well you know maybe it might be a good time to get the dietitian involved and maybe get some tips on how to hide the vegetables or whatever.

Researcher/facilitator] *So by and large it's a conversation you're not entirely comfortable having?*

All participants] No (from all four).

Researcher/facilitator] *Okay.*

Participant 4] I don’t do before school checks now, but we have a part time nurse that does them for my patients, there’s been a lot in the media about a practice nurse said my child was overweight and very similar to what you say. He’s always been on the higher percentile for his weight and the practice nurse said he was fat and ra ra ra and there’s been a lot, I think I’ve seen one nice article on Stuff.

Participant 3] That one you showed us, yes.

Participant 4] There was one nice one that was like changed my life yeah it was really nice to have that discussion but there was far more negative stuff I’ve seen about it all and getting really down on the practice nurse.

Participant 3] Even if you’re really careful about how you word it you know for their height you know their weight is just a little you know. They still know what you’re saying.

Researcher/facilitator] *Yep and so you often use the charts.*

All participants] All (overlapping)

Participant 1] There’s the weight.

Participant 3] I want to see what chart you use because mine flips over from zero to two you know when you’ve taken it from birth till two, mine flips over into the older group after two or three and then I’ve only got that one on the chart.

Participant 4] Sitting on there, yes.

Participant 1] So I don't have a gauge.

Participant 2] Yes, they normally do zero to two and then it's the older.

Participant 3] There isn't a continuous.

Participant 2] No.

Participant 3] Oh so you can't see the trend.

Participant 4] No. You can't see the trend.

Participant 1] It's the same as in the Well Child which I've got a copy my dummy one.

10.44 mins

Participant 3] And I think too our own personal experience with being overweight for me probably has some effect. If you've had your own mother telling you you're overweight then you don't really want to be that person telling somebody else's child that they're overweight. I think that probably affects the way that I find.

Participant 1] That's a very sensitive topic for practice nurses to have with anybody. So even you know talking to them about Green Prescription or about changing the diet or their dietary needs or anything like that you know it is a very sensitive topic, I don't know if nurses in general are very well equipped to have these conversations with patients.

Researcher/facilitator] *So it's something you'd like to have?*

Participant 3] Because we need to know so much about so many things. You know we can't

Researcher/facilitator] *Have that magic wand there.*

Participant 1] No.

Participant 3] And I don't know even if you said it in the best way you would still you know because I just think it's a sensitive topic so regardless of how well you might say it.

Participant 1] Might dress it up it's still, you're still saying someone's child weighs too much.

Participant 3] So they'll take it personally regardless of how it's brought up.

Participant 3] I would.

Participant 4] You're attacking their parenting.

Participant 1] The ones I've seen what happens is they wait until they see the doctor and it all comes out there.

Participant 3] And then she has another discussion.

Participant 1] I think also they're starting to move towards doing things as families, so you know like Appetite for Life or Green Prescription and I don't know I mean maybe it should be in the future maybe there should be sort of more of a sort of family discussion. I don't know it's just hard like because if you do it as an individual that's sort of whatever, but chances are and the girl that I referred if they are actually overweight then often the parents are too. So, it's sort of maybe that parent had to deal with other issues. So, there can be a sensitivity there already yes.

Researcher/facilitator] *That's a last priority. So, you mentioned those lifestyle programmes before have you been able to refer anyone onto those?*

Participant 1] Appetite for Life normally it's seen as too much, I haven't actually done, well I didn't know much about it for a while, but I've learned a bit more about it. So Green Prescription well that's generally adults that I do referrals for. But I often use the resources on health pathways and also the booklets about suggestions for you know foods and snacks and things like that. Some of them are a bit limited if with ethnicity some of the foods sort of information yeah, it's sort of but

Participant 4] Not like they'd have at home normally.

Participant 1] Yes.

Researcher/facilitator] *So the impediments what you find sort of as a barrier to doing this is, there's cultural issues with differences there and*

Participant 1] Yes

Researcher/facilitator] *And also the charts as well and being highly sensitive topic and parents being very – what's a good word for it – you know that they're really just don't want to be hearing it at all. So as well some personal*

Participant 3] Yes sort of personal, so you know you're feeling uncomfortable with the parents feeling uncomfortable, the child's probably listening and thinking you know whatever they're thinking.

Researcher/facilitator] *And there's a requirement that you are supposed to identify and refer on and yet you haven't been given the support enough support to do that.*

15.03 mins

Participant 3] And I think the thing I was saying before having an email back saying you know why haven't you referred well because I haven't and then well you really should, but I suppose if you're happy with your decision.

Participant 3] Very aggressive.

Participant 3] You can ring and discuss it with me, but I didn't ring and discuss it, I put parent declined. And yes, I was happy with my decision.

Participant 3] As you say a lot of that

Participant 3] It's a bad idea, a bad idea

Participant 1] With saying that

Participant 1] Before school check is such a small part of what we actually do in a general basis.

Participant 2] Yes

Participant 1] And it is far more important to maintain that relationship if they're particularly here where we are the only practice nurse generally for one GP and so you know they're not going to, that family's not going to see another practice nurse in the building and so that importance is maintaining that relationship because they're going to come back to you with everything else, you're going to see them multiple times and you want them coming back not being offended and leaving the practice or going elsewhere.

Researcher/facilitator] *So that's really important.*

Participant 3] We will sometimes discuss patients with the doctor because they don't always see the nurse, they might see the nurse for vaccinations and then we won't see them till four years so there could be gaps as to we don't know them that well. And if they're newly enrolled and things so sometimes

Researcher/facilitator] *Not enough history.*

Participant 2] Well it's just you know sometimes it helps knowing the family quite well we sometimes have the advantage of in this practice because the nurses and that are assigned but sometimes we don't. So, it depends on your relationships that you've already established with them, so yes.

Participant 1] Sometimes too I don't load the before school check onto the computer until after they gone. So, when I'm loading on the height and weight under the before school check and it says show percentiles and I press that button and it says 98% and I think oh are they. And then you know because it's a laborious thing to load in they've already gone. They've gone and just hit the button 98% oh, oh. That is a difficulty.

Participant 3] But there's another difficulty with that because you have that other chart in front of you and you're doing it in front of them the child and the mum or dad and then it comes up at 75% and then you go onto the computer and it's 91 and you go oh my god.

Participant 4] Yes, they're different graphs, the one that we use on the computer and the one on the before school check. I mean in the Plunket book it's different than the computer.

Participant 1] It's the chart, the charts that we were given by the before school check people, they're manual charts where you do the month to the height and weight and then it comes up with the BMI as well and then you measure that based on that height and weight and it's different to the one in the computer. The one in the computer makes it higher.

Participant 3] I think that's a huge problem with it.

Participant 1] It is.

Participant 4] Particularly in MedTech because you know we've only got one growth chart so even when you're weighing babies you know we see babies all the time for vaccines and when you're weighing them

we've only got that one chart and that doesn't take into the account the fact that they might be Indian therefore smaller than the Pacific baby you're going to see, there's no ethnic allowance for it and so you really just sort of don't know your mind really.

Participant 3] Yes

Participant 1] I did one a couple of months ago and it come up at 75% and then when I loaded it, it came up at 91%.

Participant 3] That's a big difference.

Researcher/facilitator] *I didn't even realise they were different.*

Participant 3] And I've had parents like say oh, but you know they're really sort of right at the bottom and I say it's this tiny Thai woman you know how big's your husband the same size, they're not going to have a big baby.

Some of the before school checks I forget her name, she was the nurse that took over, brown curly hair she's really quite gentle spoken. Anyway, she said to let them know if what we got on these was different to the before school checks.

Participant 3] It is.

20.09 mins

Participant 1] For patients but mine

Participant 3] Mine are still coming up

Participant 2] I don't think mine might have had one that was slightly different but normally they're the same.

Researcher/facilitator] *So what do you do in a situation like that?*

20.28 mins

All participants] All (overlapping)

Participant 2] I don't use those, I just put it straight onto the computer.

Participant 1] Well I do that before they go because I don't want to ring them back and say actually it's in this range.

Participant 3] We have a discussion over the phone.

Participant 2] Yes

Participant 3] And they don't like that either. The other thing is the parent making the appointment to see you has to take time off work that's the first and they bring that child in they have to spend all that time at the before school check and then to let them know that well you can be referred here for this. And that's more time they're thinking about off work but it's all going over in their brain and they're going I'm being told my child is overweight? myself I'm not coming back.

Researcher/facilitator] *So it's more important to keep the rapport there, yes.*

Participant 3] I can see you know the overall aim is a good aim we want to have healthy happy active children and families. But I'm not sure that we're doing a service.

Participant 1] How I think it should run there should be a big overall community thing with physical activity and what I mean there is you get the community together to run not programmes for overweight people, for getting communities together with kids all the same age tiddlers school tiddlers multisport and even to refer people to that it gets people out there engaging with the community and other people actively doing things together because a lot of people are getting isolated because there's so much emphasis on work. Mums and Dads are working and how the heck are they going to get out there engaging with the community.

Participant 4] The sports on a weekend.

Participant 1] Well actually I'm doing my third job on a Saturday morning I can't take, you know what I mean like it's

Participant 1] Just things like that, because I know this PT instructor and she does what's called Tiddlers Multisport and they start at the age of four do you know what I mean and instead of running they do bouncing on some bouncy castles and then yeah then they get on their little bikes and all that sort of thing. And then they have sausage sizzles and stuff like that, well maybe that's not good but at least it's getting the community together.

Participant 3] We know it's worthwhile, we want our children to be healthy

Researcher/facilitator] *(overlapping) but the onus is on you to*

Participant 3] (overlapping) do you know what I mean

Participant 4] Yes

Researcher/facilitator] *Just making environmental change rather than*

Participant 1] Yes

Participant 4] Mum and dad are both working and so you know they're exhausted at the end of the week and it's easier and cheaper to get fish and chips than to go home and make a meal.

Participant 3] Sometimes even just trying to book appointments it can take two or three weeks to book the appointment because their life's you know when they've got time and they've got another child and whatever. So, there are families that decline before school checks and sometimes they can be the families that you know like the same with Plunket often those that are time in Plunket are the ones that need Plunket.

Researcher/facilitator] So you really recognise what's going on for the parents.

Participant 3] Yes.

Researcher/facilitator] *Just going back to motivational interviewing who of you have had any experience or training with*

Participant 2] I did the one a general one recently and there's the follow-up in a month.

Researcher/facilitator] *Okay. And did you find the training adequate?*

Participant 2] Oh it was good yep. I think it's something that's going to practice especially with us because we don't have a lot of time but yes, I'm trying to be more aware about what words I use and how I approach, just trying to keep reminding myself to you know approach or ask patients trying to get their

Researcher/facilitator] *So there's certain techniques you're trying to apply in your role with before school check*

Participant 2] Yes

Participant 4] I've had training and it's very much a practiced skill, I found the training really good and I've got the flowcharts on my wall but it's very much a practiced skill when we're busy and got so many things going on we tend to just revert back to the normal language I guess and the normal style.

25.46 mins

Researcher/facilitator] *So have you noticed anything different since you've been using this*

Participant 4] I haven't really had a chance to use in the before school checks because I've got about three people that I'm trying to hassle to come but one coming in today so I might be able to book them in but there isn't, other than discussing food and weight I guess those are the things that would come up in before school check, yes but I mean I'll sometimes ask people what they think about something you know. Different vaccinations and they don't want their child to have them, so you know I tend to ask them what their view is before and give them my information.

Researcher/facilitator] *You're getting on board with them.*

Participant 4] Yes, it's quite a good thing to use in terms of going back to weight when you're referring adults to Green Prescription or to Appetite for Life and stuff like that and saying so what do you think about your weight and bringing that skill in then is often quite a good time to use it as well.

Participant 3] Have you found that what we're saying is general or are we down on it or?

Researcher/facilitator] *No, no I've been hearing some feedback well what I have been getting is that there are difficulties and it's not an easy task, definitely that's a big point, so no you're not alone.*

Participant 1] So we're not falling short.

Researcher/facilitator] *Not at all. No. So what sort of support would you like?*

Participant 3] I think it got up my nose I would like not to be, not being questioned about what I've decided. You know if you want me to be a before school check checker and you've put me through the training and I've been doing them regularly then having someone just sort of you know come back with that, it was alright to ask why I didn't and I answered why but the well if you're happy with that is not okay. So just to accept you know what we're doing on face value would be nice.

Researcher/facilitator] *Some acknowledgement of what you're actually doing.*

Participant 3] Yes.

Researcher/facilitator] *The difficulties.*

Participant 3] Yes. So, I haven't done it, and this is why, and not an extra reply.

Researcher/facilitator] *Anyone else, any comments on support that you'd like or that would be good?*

Participant 2] Sometimes I also think if you're not overweight yourself some people can kind of think that they might have had experiences with people that aren't and it's sort of a judgement thing.

Participant 3] It goes both ways doesn't it.

Participant 2] Yes. So sometimes yeah it's a little bit like how they can relate to the person what's whatever yes so they might, sometimes I mean I am lucky I can eat a lot of food but it's interesting a lot of people just assume that you know they just make assumptions oh you must eat really well otherwise people go oh must be able to eat whatever you want. There's a skinny white girl, what do you know? Participant 2] And I think that, that's a barrier is the person who's sitting in front of you, you know like if someone's from a different ethnicity or different community it's that whole you know that can be kind of a barrier, yes.

30.05 mins

Researcher/facilitator] *So being able to remove that judgement would be*

Participant 2] Yes so you know

Participant 3] It works both ways doesn't it.

Participant 4] Instead of having those, ethnic specific group charts would help.

Participant 3] (overlapping) so we're at the advantage that we probably met the children before whereas I know there are the before school checkers that work in the community that have never met those children. So, I don't know you know it depends on who's coming to them. So that can

Participant 1] Because we know the, you know generally we know the families.

Researcher/facilitator] *Yep.*

Participant 3] And some patients can get quite sort of whatever they will go oh what, oh I came in last time you were away you know. So, they can get quite you know

All (overlapping) ??

Participant 1] They get quite attached to you.

Participant 3] Yes so that's an advantage sometimes you know it can put up your

Researcher/facilitator] *It can make it tricky when you're I need to say this to you.*

Participant 3] I probably do need some more training.

Participant 1] I do.

Participant 3] The whole weight healthy thing and I know I need to do one for family violence well they did one and I couldn't go and I'm waiting for them to do another. Just some short, one or two-hour spots here and there just before school updates for us because I haven't been to by choice because I couldn't go to any before school check updates since I did the training.

Participant 4] Would virtual stuff work for you like if they did an email thing?

Participant 3] Oh no I need to go, I need to go I've been there in Nelson you know if they could just run some more how do you have the healthy weight conversations, how do you have the, because they don't want us to talk about family violence until we've done the training and I haven't done training.

Participant 1] Oh I haven't done the training.

Participant 3] I haven't done the training.

Participant 3] No. And I asked about when are you going to be doing the next lot of training two years ago and there still hasn't been one so we need some more training. We need some more updates, yes.

Researcher/facilitator] *Alright. That's fabulous thank you. That's really good.*

TAPE OFF END OF TRANSCRIPT

Individual Interview 5.

11-10-17

Individual face-to-face interview

Participant: Before School Check nurse

(The interview began while the researcher was setting up. There were attempts to go back over parts of the conversation that were missed during the recording)

Participant] … it's very basic and we've done that but now we're establishing a really good relationship with the families that we see and I guess the nurses were very experienced and had worked here prior under Pasifika have been quite burnt from what they experienced and we've approached them but at the moment they're not ready to come back which is a shame because they had that language which yeah.

Researcher/facilitator] *You're trying to sort of do what you can with what you've got?*

Participant] Exactly, yes.

Researcher/facilitator] *How long has it, your role started here in March but how long has the centre?*

Participant] It's actually, I was told the 4th October was their anniversary date

Researcher/facilitator] *So not long*

Participant] It wasn't long after it closed but the clinic definitely re-opened its doors on the last week of March, yes. And we're under Pegasus as well.

Researcher/facilitator] *So you said you've been a nurse for ten years and as a before school check nurse how long have you been…?*

Participant] I've been a nurse for about 15 years but the before school checks about ten years. Yes. And the motivational interviewing didn't really come into play until probably the last two years. So, one of the peers, I did a course with a group of nurses and doctors and I'm still, it's such a huge area I'm still learning a lot about it.

Researcher/facilitator] *It's complex.*

Participant] It is quite complex, and I think even then the situations where you know you can use it influence a few things and it's not going to work it's not required or not that urgent, but yes.

Researcher/facilitator] *So the training that you did where was that through?*

Participant] Through Pegasus I was at Riccarton After Hours Clinic and I put my name down so they did an interview and I initially thought it was just to learn because I'd heard so much about motivational interviewing over the years but it was quite hard to get into and I sort of try to learn a little bit of it on the internet and so I thought this is an opportunity but it ended up being a peer group to provide information to other workers and nurses and clinicians. So, I thought okay I'm kind of a person that well I'm here I will go with it. Yes. So, I went with it yes.

Researcher/facilitator] *And was it useful the training that you got?*

Participant] It was excellent it was really excellent. I guess it's still becoming a natural part of it sometimes I still struggle a little bit but what I'm finding is the more I use it the easier it is and actually starts to become just second-hand but the intricacies I'm still, every now and then I'll pick up the book and I'll read it and I'll put it down and it's like those you see you pick up something new and oh you see it from a different angle. So yeah.

Researcher/facilitator] *So you've been able to apply some of those skills you've learned and found you've had the time to be able to do that?*

Participant] Yes. Yes. More so with the diabetes. With before schools I've had, I've been contacted to get children in that are overweight and they've been very difficult to get hold of but there is definitely two people, it doesn't sound good that I know that I manage to have that time to do motivational interviewing yes. The problem with the before school is often I think I've got about six that I've seen and the parents don't turn up with the forms and they're very high needs, they're all well overdue for their four year old and they're always so busy the mothers have always got stacks of children with them and so you're sort of trying to create an environment so – but one family I know I touched on weight and it wasn't such an issue, it was an issue for the mother because she was overweight and start talking about it more. Yeah it was really

Researcher/facilitator] *(overlapping) so you had a breakthrough on that occasion?*

Participant] Yes. Yes. How did I touch on that, I knew I took one look and I thought oh wow and I did the height and weight I got the immunisations out of the way and I'd met her previously because she's with another of the etu's team so I met her previously because they provided funding for a first health check and it had been hard to try and get her in to get the children in for this particular, there were two of them one was for the flu catch-up and the other one was for a catch-up one on immunisation. So the way it came up and I remember I looked at her and I showed her the graph and I just said that's where it's sitting and I said he's actually sitting up here which is above the 98 percentile and I said my concern is that when we look at that, at the moment he's quite young but for a lot of our adults in today's society we're looking at teenagers and they're having problems with diabetes and having problems learning and have had problems with their eating habits. So, I always tend to go, I find it easier that way because I find it kind of clinical but at the same time it's sort of a nice way for her to see where

Researcher/facilitator] Where they're heading.

Participant] And why.

Participant] Yes because she was great, and she said oh okay so what does that mean? And I said well we need to look at helping him to lose weight, we need to be looking at what you're eating, and she goes oh. She said it's not really good and it was awesome oh I actually need to lose weight we don't eat really well. I'm a single parent with four children and I asked has the school said anything and she said no. And I thought oh okay, I said well you know how it's mentioned about teenagers I would like to think that we can support your son by making a referral because he's sitting up here and what we need to do is make

sure that he grows into that weight. I said it's making sure he eats the healthy food, but also more activity and more healthier foods and she was really really good. So, I got her the option and I think it was with Green Prescription we got involved and I've got a plan for them to come back in a month's time so that we can see how things are going and just touch on that again. The diabetes are kind of the same thing too. Yes so it's not children but it's adults that you can see they are quite obese have struggle with high levels or at high risk with their HbA1c ones you know and so it's time and it's trying to get that buy in as some will just nod their heads or say something and I think there's no buy in here. And then one gentleman out of the blue turned up wanted to talk to me but somehow it hit him when he spoke with his colleagues that two of them are diabetics and they're on this insulin and I can't do that. I looked at him and I said so what are they doing. He said oh they're matching their sugar levels and I said okay and I said so can I just ask you what do they look like and I said are they quite big or he said they're really big and I said alright well I just need to explain about one of the side effects of insulin. So, I went onto that and I just explained that you know they're doing the, they're managing to get the sugar levels low but they're not doing the simple the basic things. I said and the reason I kept saying to you, you can sort of watch what you eat and do exercise and try and lose weight you'll find that you'll need less insulin to be able to control your sugar levels. So, it's still taking a while, but he did, he said yes, I'm going to do it. So, at the moment he's gone through the diabetes specialist nursing. We went together and the great thing I could see even though it's going to take time he's really eager to learn, to listen and actually make the change.

Researcher/facilitator] *So it's now important for him to see that?*

Participant] Yes but it was, he was ready and something else outside of the clinic got him thinking why don't I try this so it gave us a chance to be able to do the education around this is what insulin does and you'll know it can be low, but this is the problem with the weight. You're only 35, long term it was all that kind of thing trying to sort of let him see that this is what you're up against even though it's hard the best way is with exercise and healthy eating and that's what I've touched on if long term you want to see your children grow up get married.

Researcher/facilitator] *So you hit on those really important*

Participant] Yes, those milestones then they can go yeah, I do.

Researcher/facilitator] *If we go back to a conversation perhaps with a parent or caregiver where it hasn't been so successful what's happened on one of those occasions?*

Participant] Language barrier. So, one incident a mother had her teenage boy and I had no idea she couldn't speak English and he was translating so I had to be really really careful and to be honest there were other things that I could see that were an issue as well.

Researcher/facilitator] *Greater issue than*

Participant] Than the diet. But definitely language barrier when I've had a parent come in and I look at the size of the child and then they go oh yes, yes and it's interesting they tend to revert back to themselves and say I want to lose weight. So, I'm okay yeah but it's really good it's a family thing. Fortunately a majority of them happen to be linked in the Whānau Ora so they have two workers there, one in particular does health and nutrition she visits schools, so I've been able to do the referral to link in back with her then and talk to the parents and say because I've got this task and I'm going to catch up with the team and see how things are going and sometimes they will – they've done some really really good work but again it's just a small team so a thing in progress. For me it's definitely language barrier. That's the huge one and not responding, not responding when the before school coordinators will let them know that there's a child and they've looked at it and not responded back at all.

Researcher/facilitator] *Okay just completely avoid it.*

Participant] Yes

Researcher/facilitator] *And so the families that do go through Whānau Ora they are quite happy to go through that service rather than another?*

Participant] Yes but some, two have come back where they felt they haven't received the service and when I've gone back to Whānau Ora they said that they've had difficulty, but when that's happened because when I talk about what's available is I also include Green Prescription but the option with Whānau Ora. So, there's always the understanding when I catch up with them and you know how did it go, well I haven't heard from them. I say well I'll ring the Green Prescription, so I'll put them through that and Green Prescription will let me know if it's difficult to get hold of them as well. So actually, getting them on board is the huge challenge but language barrier's a big thing for me.

Researcher/facilitator] *Okay that's the biggest that you face.*

Participant] Which is a shame. Yes.

Researcher/facilitator] *But otherwise when you use motivational interviewing what sort of specific and you've mentioned some before, what specific techniques do you think that you use in a conversation?*

Participant] So the technique that I use is often when I'm providing information is asking permission to provide information. It's reflecting what the mother's saying to me so when we look at the food she said oh we eat a lot of junk food I say so it's a lot of unhealthy food you eat at home can I ask why you know. Also have you thought of other ways, posing the question, have you thought of other have you actually thought of ways to get healthy but it's very simplistic.

Researcher/facilitator] *So have you noticed a difference you know using those sorts of techniques?*

Participant] I do notice a difference using them particularly I find it's more effective if I know that they're interested that I've got them clued on otherwise it is hard, it is hard when I talk about a family life. So, when you haven't told your family about the way your diabetes because you're worried about how they feel, they're worrying about you. Oh yes, yes, it's no good but then it's that, I think it's that lack of comprehension of what I'm actually saying. Because she replied with yes yes, I don't want them to know and then she said they're busy with work and that's about it. Trying to engage with that is very very hard. Yes.

Researcher/facilitator] *So it's once you've got the, once you're working through that ambivalence or you've got the rapport and you're working through that the resistance then you feel better able to have that conversation.*

Participant] Yes definitely.

Researcher/facilitator] *Okay. The biggest barrier is the language and those who don't even make contact with you is there anything else that you've found that impedes on your ability to be able to?*

Participant] Yes when I mention comprehension I think their understanding of how important the topic we're talking about is, this is the mother with the son that was translating when I mentioned about her son's weight and then she turned around and she came back, she came back and saw me actually later and then she talked about her weight and wanting to lose weight. So, I referred her, we referred her back to Whānau Ora, but the interesting thing was that I couldn't talk much with her because I had to kind of make it double check. So, for example you know there are organisation we have agencies that can help you, have you heard of Green Prescription as well and then she goes oh yeah. And then I go losing weight they'll be given a book and I go that's all about you know the this is healthy food, I use the diabetes healthy choice book because it's got pictures and everything and she went oh yes, yes. I'm going to refer you to Whānau Ora because I'm thinking she wants to lose weight, but I can tell that it's really hard for her to understand unless she's got someone that can speak Samoan. And I guess we have interpreter line which I haven't tried, we do have access to the interpreter lines, but I haven't tried that yet. That's something I should definitely do. Again, the ideal is one nurse and doctor and trying to do all their things.

Researcher/facilitator] *I know it's getting the experience this is getting a range of experiences is what it's about, so it's been valuable information that you've given to me. Last question would be around support, do you feel there's any support that you'd like or need?*

Participant] Yes. We've got a clinical director on board and I guess in terms of support it's more systemic support really.

Participant] In terms of MI it's that ability to have I guess in an ideal world everything panned out wonderfully. So, a lot of the visits it got an opportunistic, so before school checks the families I have managed to get in contact with is six families and that they've come in I've just been really pleased about all of them have had to sit here and fill out the book. The two that we were struggling with the language and it was around the weight, that was difficult and I guess it would have been nice if I could have had access to someone that could speak the language and also it's the reality with the families when they come in have got the, this lady for example had her teenage son translating and she had three other little ones running around and they were running around and running around because she said she was really tired she has six children, three little ones, the three older ones and her appearance was quite, I remember I noted that she was really quite a mess. When I spoke with Whānau Ora they had a lot of struggles with finance, housing, the house was cold, the dad was working long hours, and out of that I've picked up that some of

the older children haven't been up to date with their vaccinations so it is really complex because when the four year old children come in and they say oh they're up to date and then I look at the family tree and then I do a little check with the older children that are under 18 and then I realise okay not all of them are up to date so is it one that's more likely because they're on the MedTech the MIR system because of their age? Or second it became which is often the case that they haven't had their vaccinations, they've had vaccinations overseas but there's been no document? So, what would be more supportive is more systemic more than the MI itself. If I had things in place and don't worry I've spoken to the clinical director about it, I'd probably have that freedom to be able to review what the BMI appointment because I do, I look at it and it's like one appointment and then during the day it suddenly becomes five appointments and it could be that the before school suddenly rang up at the last minute and they've made the appointment and then it's like wham bang they're here. I go okay let's deal with what we can do first and then if there's any issues of weight I'll follow that up. Yes.

Researcher/facilitator] *Okay yep so prioritising.*

Participant] Prioritising but yes, it's more systemic to do with the clinic more than the support with MI. I mean I could always do with a refresher MI that would be really good. I attended one peer support group where I supported Caroline and I still feel, I think it is confidence, I mean I could sit there and read the presentation they've done out wonderfully for us but I guess for me I'm the kind of person that it has to have meaning when I see it, yes I guess it's

Researcher/facilitator] *Rather than cherry picking*

Participant] Yes and just reading it. But I know things, I'm the kind of person that will learn the more I do it the more it becomes second nature. So, it's still kind of the new thing. But I do love it.

Researcher/facilitator] *It sounds like you have some confidence using it when you do too.*

Participant] Yes.

Researcher/facilitator] *Excellent thank you so very much for that.*

TAPE OFF END OF TRANSCRIPT

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